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BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

EDITED BY

DR. JEFFERY G. HARRISON

Volume 81

1961

BRITISH MUSEUM
Z D
NATURAL HISTORY

PRICE FOUR SHILLINGS

PREFACE

In writing my last Preface, after ten years as Editor, it is first my very pleasant duty to thank all the many contributors who have supported the *Bulletin* during this time. The fact that the *Bulletin* has been able to expand steadily is due entirely to their efforts and in these years certain trends have occurred in the papers submitted for publication. Initially, African ornithology provided a major proportion of these, but now we have been able to expand in other fields and the material published is more balanced, although the African publications are no less and are always welcome.

The number of new species and races being described is falling, as would be expected. At the same time, broader reviews of interspecific variation are being made and papers dealing with phylogenetics, variants and hybrids are increasing. A number have also been published on functional anatomy and on pathology, as well as several on general ornithology. The trend therefore is for longer papers, which often have to be divided between several issues. The short note however, is still most welcome, particularly when trying to complete the last page of an issue.

The supply of papers remains excellent. The reasons for this are that the waiting time for publication averages only 7–8 months; all contributors are now sent proofs and receive up to 50 free copies instead of 10 as formerly. Now that the Scientific Index is again being published annually, it is most gratifying that we should have received a Royal Society grant towards the cost of the proposed index to cover the 10-year gap (1950–1959).

At a Special General Meeting held in September, it was agreed that members with fifty years unbroken membership of the Club automatically become life members and the following are to be congratulated upon qualifying under the new rule:— Dr. D. A. Bannerman, Major Antony Buxton, Captain Collingwood Ingram, Sir Philip Manson-Bahr, Colonel R. M. Meinertzhagen, Mr. D. Seth-Smith and Mr. N. F. Ticehurst.

Once again, we are indebted to Mrs. B. P. Hall for the annual Scientific Index and to Mr. C. N. Walter for the List of Authors. Miss E. Forster, Dr. J. M. Harrison, Captain C. R. S. Pitman and Mr. J. J. Yealland have also helped me with the present volume, for which I am very grateful.

The numbers attending the B.O.C. meetings in 1961 show an increase of 76 over last year and were as follows:— Members, 205; Temporary associates (home), 2; (overseas), 5; Guest of the Club, Maxwell Knight; Guests, 98; Total 310.

Finally, I would like to thank our publishers, the Caxton and Holmesdale Press, Sevenoaks and particularly the Manager, Mr. K. Wiltsher, for their help and efficiency in dealing with our problems, which are so often outside the usual run of publishing queries. I would also like to wish my successor, John Yealland, and the *Bulletin* every possible success for the future.

JEFFERY HARRISON.

Sevenoaks, December 1961.

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The Caxton & Holmesdale Press, 24 South Park, Sevenoaks

Bird Room

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

12 JAN 61
PURCHASED

Edited by
Dr. JEFFREY HARRISON

Volume 81
No. 1

January
1961

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BRITISH ORNITHOLOGISTS' CLUB

12 JAN 1961
PURCHASED

Volume 81
Number 1
Published: 11th January, 1961

The five hundred and eighty-sixth meeting of the Club was held at the Rembrandt Hotel, S.W.7., on 20th December, 1960.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 46; Guests, 14; Total, 60.

An Ornithological Brains Trust

The Christmas meeting of the British Ornithologists' Club took the form of a Brains Trust, Sir Landsborough Thomson being the Chairman and Miss Phyllis Barclay-Smith, Sir Julian Huxley and Dr. W. H. Thorpe making up the panel.

The selected questions ranged over a wide field of ornithological matters and there were some supplementary questions and comments from a large and appreciative gathering.

(1) What benefit, if any, has the study of ornithology been to mankind?

After some discussion as to what constituted a benefit, it was agreed that ornithology had played an important and leading part in fields of biological revelation. A study of ornithology fostered friendly relations with other peoples and by reason of its many facets it attracted the interest of many, both amateur and professional. Large numbers of people derived an aesthetic benefit from the observation of birds. As to the birds themselves, there were instances of their practical value to mankind and many people gained pleasure and knowledge from the keeping of them as pets.

(2) Observations on ringed bulbuls in Cape Province have shown that, while young hens lay a clutch of only two eggs, they graduate to three eggs in subsequent seasons. Is it not probable that, contrary to usual belief, clutch size in all species is more influenced by the age of the hen than by good or bad seasons?

The clutch size of, for instance, the short-eared owl is known to be higher in times of food abundance and undoubtedly the food supply has an effect. Much would depend on the species of bird and first year statistics. Much would depend on the species of bird and first year statistics would bulk large because of the mortality factor.

(3) Would it be an advantage if the numbers at International Ornithological Congresses were limited by invitation?

It was considered a mistake to limit numbers by invitation and very difficult to decide what the limit should be. It is naturally essential that the subjects to be considered should be adequately covered by those competent to speak upon them. It is important that the young ornithologist should have an opportunity of attending, but if very large numbers of people are present, the place tends to become like a "mad-house". There was a supplementary suggestion to the effect that the numbers of papers might be limited so as to permit more time for discussion.

(4) Although a high degree of specialisation is usually associated with the least primitive birds, are not, in fact, the most successful species those which are most adaptable and therefore least specialised?

This was considered to beg at least six different questions and the whole matter needed to be examined in relation to specific cases. Adaptability itself might be a form of specialisation.

(5) What in your opinion are the most distressing features of the modern interest in ornithology?

At least one member of the panel felt no distress, though he preferred to be alone when observing rare birds. Undue interest in rare breeding birds can be a danger and precautions are necessary to guard them against their human watchers. The older ornithologists had a more general knowledge of nature and this wideness of view is lost by specialisation. A member of the audience felt that the young ornithologists were often ignorant of other forms of life.

(6) It was agreed that the family name of the bustards should correctly be *Otididae*, not, as given in ''Check-list of Birds of the World'', Peters, ii, 1934, *Otidae*.

(7) The true finches, especially the Carduelines, often feed largely on the seeds of composites such as dandelion, thistle, etc., yet except for the aberrant Estrildine *Nesocharis*, the questioner has seen no evidence that seeds of composites are eaten by other finch-like groups—buntings, weavers, sparrows and Estrildines. Can the panel say if this is correct and, if so, suggest a reason?

It was agreed that this is in general correct and presumably the birds learn to feed on the seeds that are most easily dealt with.

(8) Does the panel agree that putting out food for birds, although aesthetically and morally justifiable, can be biologically harmful by tipping the balance still further in favour of species that are already successful and abundant?

It was felt that while much depended on circumstances, it was not in general harmful, but there might be instances (as in the case of the herring gull in Germany) of certain birds becoming a nuisance because of it.

So far as is known there were not many cases of harm being done by feeding birds in gardens, though possible that tits, finding food so easily and readily obtainable, may, as a result of so much leisure time, take to the tearing of wallpaper. Birds other than common ones would also benefit from having suitable foods put out for them and on the whole it was felt not to be an important biological factor and to have no moral implications.

(9) Why does the cuckoo go ''cuk-cuckoo'' in autumn?

This gave rise to some discussion and no parallel case could be thought of. Among the suggestions were the possibility of a re-starting of a form of sub-song, that part of the call might be made with the bill closed, that the altered call might have some different meaning and that there might be some change in the vocal organs. The question brought forth the story of Dr. Chapin explaining (with imitations) to his companion on a tram-car in Amsterdam the calls of African cuckoos.

(10) Precise scientific terms have an obvious value to specialists in that branch of science, but does not their use in publications such as ''The Ibis'' tend to discourage non-specialists from taking an interest in many of the wider fields of ornithology?

It is important to distinguish what terms are necessary to explain what could not conveniently be made clear in any other way. Technical terms cannot be avoided and many of the scientific ones are of international usage. If existing ones were abolished, others would become necessary and while jargon is to be deplored, proper terms are essential and may even constitute a challenge to the student. It is the responsibility of the editor to curb the excessive use of such terms.

(11) In countries such as Britain where there is ''sporting shooting'', a high percentage of ground predators are destroyed by keepers, and a high percentage of flying birds destroyed by sportsmen. If these conditions continue will the instinct to escape by flight disappear from game birds? If so, how long will it be before they lose the power of flight?

One response was to the effect that the answer to the first part was ''No'', so the second did not arise. Another was that such birds might learn to fly higher and in any case it would be a matter of millions of years for such an eventuality to occur. A member of the audience prophesied that sportsmen would have lost the use of their feet by then.

(12) County reports often contain observations of movements not out to, or in from, the sea, which are described as migratory or passage. How do the observers know that what they see are not local weather movements or even just a change of feeding-ground? (We gather here ourselves by way of a change of feeding-ground, but an observant London starling might think it is a build-up to emigration).

This brought no appreciable comment beyond a stressing of the need for very careful observation of such bird movements.

(13) Does the scientific significance of different standards in nest-sanitation really justify the number of words that have been written on it?

It is interesting that such birds as kingfishers are so unhygienic in their nesting arrangements. The whole subject was felt to be in need of further investigation.

(14) What advice would you give to the compiler of a regional handbook on whose sight records to accept, of what species?

Serve on a committee working for a number of years anonymously.

J.J.Y.

A National Bird for Britain

Lord Hurcomb brought the evening to a very appropriate close by announcing that the result in the choice of a National Bird for Britain was overwhelmingly in favour of the robin.

A new race of *Parus funereus* (Verreaux)

by MELVIN A. TRAYLOR

Received 9th July, 1960

Among the Angola birds reported by Heinrich (1958, Jour. f. Orn., 99: 322–362; 399–421) was the Dusky Tit, *Parus funereus*, from Gabela. Gabela is on the escarpment of the central plateau in Caunza Sul, with a small area of evergreen forest much of which is now planted with coffee plantations. The population of Dusky Tits found here is separated by some hundreds of miles from Gabon, where it is very rare, and by many more from southern Cameroon, the nearest locality at which it is fairly common. When compared to Cameroon and Uganda specimens, the Angola males are noticeably paler and may be called:

Parus funereus gabela subsp. nov.

Type: Adult ♂ from 15 km. south of Gabela, Cuanza Sul, Angola, collected 8th August 1954 by Gerd Heinrich; Chicago Natural History Museum. No. 224676.

Diagnosis: Throat and breast of males dull blackish slate, not black with a greenish gloss as in *funereus*. Averages slightly smaller in wing length than *funereus*. Females average paler and more bluish slate below. Wing length:

gabela: 2♂♂ 86, 86; 2♀♀ 77, 84.
funereus: 6♂♂ 82, 86, 89, 89, 91, 91,; 3♀♀ 80, 83, 83.

Size of type: Wing 86, tail 60, bill 13, tarsus 20.

Remarks: Besides the four adults of *gabela* whose measurements are given above, Heinrich collected two juvenal females. As noted by Chapin (1954, Bul. Am. Mus. Nat. Hist., 75B:106) the juvenal plumage is much darker than that of the female, almost as dark as the males.

Heinrich found these birds frequenting the tops of the taller trees. This accords with observations of the nominate race in Cameroon and Uganda.

Some records from the Mpika and Serenje Districts, Northern Rhodesia

by C. W. BENSON, R. BOULTON AND M. P. STUART IRWIN

Received 7th June 1960

The records which follow supplement information in Benson and White's Check List (1957). They result from collecting by M.P.S.I. in the two districts in March and April, 1960, and by C.W.B. and R.B. in Serenje in the latter month. The Kanchibiya River was visited at 11°30′S., 31°17′E., likewise the Luombwa at 12°24′S., 30°05′E., the Mlembo at 12°33′S., 30° 20′E., and the Musola at 12°38′S., 30°15′E., Co-ordinates are given for any other localities not so specified in the Check List. Most of the specimens listed are now in the National Museum, Bulawayo. It is also worth mentioning that specimens of *Caprimulgus n. natalensis* Smith, *Mirafra africana chapini* Grant & Mackworth-Praed and *Cisticola aridula perplexa* White were collected at five miles south-east of Mukuku.

Pernis apivorus apivorus (Linné).

♀, 3rd April, Kondolilo Falls, Brachystegia woodland.

Stomach-contents, large mud-nest building wasps, some adults, but mostly already pupated grubs, still soft bodied, not fully chitinized, and in some cases still in cocoons.

Alcedo atthis semitorquata Swainson.

An occupied nesting tunnel was found on the Lubachi Stream, in the Mpika District at 11°35′S., 31°17′E., on 31st March. The tunnel was in a bank rising about 5ft. above the water-level, and itself 1ft. above the water. It apparently contained very small young, as both parents were bringing food, and showed great agitation on a close approach, but no sound was heard from the interior of the tunnel.

Buccanodon anchetae katangae Vincent.

2♂, 3♀, 27th/28th March, Kanchibiya River, Brachystegia woodland.

Motacilla clara torrentium Ticehurst.

♂, 26th March, Kondolilo Falls.

I. R. Grimwood saw a pair on the Lusiwashi River, at the foot of the Muchinga Escarpment, at 13°20′S., 31°04′E., on 18th November, 1958.

Anthus leucophrys bohndorffi Neumann.

♂, 7th April, 10 miles south-east of Mukuku; ♂, 10th April, Luombwa River.

Chlorocichla flavicollis flavigula (Cabanis).

♂, 12th April, Luombwa River.

Sylvia communis icterops Ménétriés.

♀, 31st March, 12 miles south of Kanchibiya River, Brachystegia woodland.

Eremomela atricollis Bocage.

3♂, ♀, 6th/7th April, Mlembo River; ♂, 12th April, Musola River.

Cisticola chiniana fortis Lynes.

♂, 5th April, Serenje District at 13°16′S., 30°06′E.

Cisticola fulvicapilla angusticauda Reichenow.

4♂, 3♀, 27th/31st March, near Kanchibiya River; 6♂, 8♀, 6th/7th April, Mlembo River; ♀, 12th April, Musola River.

Some of these specimens are juveniles, with skull-ossification not started. They differ from adults in having the underside tinged yellowish, the flanks fawn rather than greyish, while the rufous of the crown is not sharply defined from the mantle and back, which have a strong rusty tinge, extending to the outer webs of the wing-coverts. Measurements in mm. as follows:—

		Wing	Tail
Adults			
	6♂	47–49	49–53
	8♀	44–47	44–51
Juveniles			
	4♂	44–47	46–51
	4♀	43–44	46–47

Anthoscopus caroli subspp.

2♂, 2♀, 6th/7th April, Mlembo River; ♂, 9th April, Musola River.

Intermediate between *A. c. caroli* (Sharpe) and *A. c. rhodesiae* Sclater.

Nectarinia verticalis viridisplendens (Reichenow).

♂, ♀, 12th April, confluence of Kasanka and Musola Rivers, 12°35′S., 30°15′E.; ♀, 4th April, near Serenje District Headquarters; ♀, 14th April, Lusiwashi River at 13°12′S., 31°02′E.

The Musola specimens were together, and accompanied by a fledged young bird still under parental care and being fed. The male had testes measuring 4 x 3, 5 x 4 mm. and therefore apparently shortly to breed again.

Nectarinia olivacea lowei (Vincent).

♂, 10th April, Luombwa River, both testes 5 x 4 mm.

Phormoplectes angolensis (Bocage).

♂, ♀, 2nd/3rd April, Kondolilo Falls, from mixed bird parties in Brachystegia woodland.

Lagonosticta rubricata haematocephala Neumann.

♂, 6th April, Mlembo River; ♂, ♀, 12th April, Musola River.

The Musola specimens were collected with the same shot, and in neither had skull-ossification started. They resemble adults in the colour of the tail, upper and under tail-coverts, lower abdomen and thighs. But elsewhere on the underside they are yellowish brown, with only a little red on the chin and throat. The top of the head is greyish brown, rather than greyish vinous, and the brown of the mantle and back is warmer, more tawny than in adults. A juvenile collected by W. F. H. Ansell at Kabompo on 10th March is very similar, but probably even younger, since red is altogether lacking on the underside. The Mlembo specimen is also juvenile, but apparently rather older than the two from the Musola, red on the underside being rather more developed.

Lagonosticta rufopicta nitidula Hartlaub.

♀, 30th March, Luitikila River, near Mpika.

Estrilda melanotis kilimensis (Sharp).

♀, 14th April, Musense, top of Muchinga Escarpment at 13°15′S., 30°05′E., oocytes mostly of diameter 1 mm.

P.S. — More recently, at Musense, the last mentioned locality above, C.W.B. has collected *Cossypha bocagei chapini* Benson, *Phylloscopus laurae eustacei* (Benson) (including a female in almost full breeding condition on 10th October) and *Heliolais erythroptera rhodoptera* (Shelley).

A note on *Euplectes axillaris*

by C. W. Benson

Received 9th July, 1960

Benson & White (1957) record specimens from the Kafue Flats, Northern Rhodesia as near *E. a. axillaris.* Further collecting in Kafue drainage, from near Kalomo north-east to the Lukanga Swamp and Broken Hill, confirms that this is substantially correct. On the other hand, material from the Northern and North-Western Provinces, Barotseland and the Caprivi Strip is easily separable as *E. a. bocagei*, the patch on the wing-shoulder in the great majority of adult males being orange-yellow rather than orange-red, and the cinnamon on the lesser wing-coverts more extensive and paler. It will also be seen from the accompanying Table that males in breeding dress tend to have a shorter tail.

Despite recent intensive collecting, there is no evidence of the occurrence of the species anywhere in the Luangwa Valley or the Zambesi Valley below the Victoria Falls, though it no doubt occurs in the lower part of the Zambesi Valley, since specimens have been available from Port Herald, in the extreme south of Nyasaland. This absence is probably due to lack of suitable marshy habitat, and is paralleled by several other swamp-dwelling species, namely *Ploceus xanthopterus* (Moreau, 1959), *Cisticola galactotes* and *Amblyospiza albifrons* (Benson & White, 1960). Furthermore, *Euplectes a. axillaris* is unknown from Southern Rhodesia except from Mt. Selinda (Smithers *et. al.*, 1957).

TABLE

Measurements of males of *Euplectes axillaris* in breeding dress

Area	*Number of specimens*	*Range and mean (mm)*		*Mean tail/wing ratio*
		wing	*tail*	
E. a. axillaris				
1. Pondoland Natal, Transvaal	13	85–99 (90.9)	63–80 (71.8)	79
2. Portuguese East Africa south of Zambesi, southern Nyasaland	4	82, 85, 86, 87	61, 72, 77, 79	85
3. Kafue drainage, Northern Rhodesia	10	88–92 (90.5)	69–80 (75.1)	83
E. a. bocagei				
4. Northern and North-Western Provinces, Northern Rhodesia (other localities below).	17	85–98 (91.3)	57–74 (66.2)	73

Notes supplementary to Table.

Area 1: One male in non-breeding dress has wing 85, tail 53 mm.

Area 2: Six males in non-breeding dress have wing 85–90 (87.8), tail 51–65 (60.8) mm.; three females wing 68, 70, 73, tail 41, 43, 44 mm. A male in breeding dress from Chinteche, northern Nyasaland, has wing 95, tail 80 mm.

Area 3: Six males in non-breeding dress have wing 88–94 (89.7), tail 56–59 (59.3) mm.; one female wing 70, tail 43 mm.

Area 4: Fourteen males in non-breeding dress (including six from Barotseland and the Caprivi Strip) have wing 88–96 (91.4), tail 53–65 (60.4) mm.; seven females wing 67–74 (70.6), tail 42–49 (45.6) mm.

It is remarkable that males from Kafue drainage should be so similar to *E. a. axillaris*, and yet quite easily distinguishable from those from the neighbouring Caprivi Strip and Barotseland, in Zambesi drainage. But in view of the habitat of the species, the watershed would be a barrier to dispersal. Actually, Kafue males do tend to have the cinnamon in the wing-coverts rather more extensive than in eastern birds, in this one respect showing some approach to *E. a. bocagei*, but the difference is not such as to justify their separation by name from *E. a. axillaris*. Apart from this, there is some individual variation in the series of males from all four areas, in the colour of the shoulder-patch, as well as in the extent of cinnamon and its intensity. Nevertheless, the subspecific division by name indicated in the Table is justified.

Both Bannerman (1949) and Chapin (1954) regard *E. a. mechowi* as a synonym of *E. a. bocagei*. Nevertheless, Rand *et al.* (1959) recognise *E. a. mechowi* as well as *E. a. bocagei*, on the basis of only eight males, the distinction given being that *E. a. mechowi* has the shoulder-patch reddish orange, *E. a. bocagei* yellowish orange. Four specimens from the Katanga are assigned to *E. a. mechowi*, one from Balovale to *E. a. bocagei*. This appears to be based on individual variation. I have seen a specimen in the British Museum from the Kabompo River, in the North-Western Province of Northern Rhodesia, in which the shoulder-patch is as red as in any specimen of *E. a. axillaris*. On the other hand, there is a specimen from Natal and another from the Transvaal in the series now examined, in which the patch is as orange as in any of *E. a. bocagei*. Furthermore, Schouteden (1958) includes the Katanga within the range of *E. a. bocagei*, which he states has the shoulder-patch as orange-yellow, rather than orange-red as in *E. a. phoeniceus*. He had thirty-five specimens available of the former, over two hundred of the latter form.

The measurements in the Table indicate considerable variability. This is also commented on by Bannerman (1949), but like him I consider that we are dealing with one, not two, species, both on a basis of my examination of specimens and on field-observations.

To my personal knowledge, *E. a. bocagei* in the Northern Province of Northern Rhodesia, whence a specimen has been available from as far east as Mbesuma (32°E.), must be quite isolated from the populations not far to the eastward in the Lake Nyasa littoral, believed to be *E. a. phoeniceus* (Benson, 1953). In Nyasaland the species is unknown above 2,000ft., whereas in Northern Rhodesia all the occupied habitat is at 3,000–5,000ft. There is no lack of apparently suitable habitat at higher levels in Nyasaland.

Immature males, not included in the Table, are similar to females, likewise lacking any cinnamon in the wing-coverts, but with the feathers on the wing-shoulder black edged with orange-red in *E. a. axillaris*, more orange-yellow in *E. a. bocagei*. Six such males of *E. a. axillaris* have wing 80–85 (81.8), seven of *F. a. bocagei* 82–88 (84.3) mm.

I am greatly indebted to Messrs. P. A. Clancey, M. P. Stuart Irwin and A. Prozesky, for the loan of specimens respectively from the Durban Museum, the National Museum, Bulawayo and the Transvaal Museum. I must also thank Messrs. W. F. H. Ansell and C. M. N. White for their comments.

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The range of *Tchagra minuta reichenowi*

by C. W. Benson and M. P. Stuart Irwin

Received 16th July, 1960

It has been usual to include eastern Southern Rhodesia as within the range of *Tchagra minuta anchietae*, the latest author to do so being Rand, in Mayr & Greenway (1960). However, Clancey (1959) described a new form, *T. m. remota*, ranging from the eastern highlands of Southern Rhodesia to southern Nyasaland. Benson (1960) follows him in using the name *remota*, the differences between material from Southern Rhodesia and Northern Rhodesia (*anchietae*) being readily apparent. Neither of these authors, however, was able to examine any material from East Africa. Thanks to Mrs. B. P. Hall and Mr. J. G. Williams, we have had the loan of specimens from the British Museum and the Coryndon Museum respectively, in order to decide whether *remota* really was distinct from East African *reichenowi*. We are also grateful to Mr. O. Prozesky for the loan of several Nyasaland specimens, in the Transvaal Museum. The observations which follow are based also on all the material from the Rhodesias and Nyasaland in the National Museum, Bulawayo. Immature specimens, in which subspecific differences are difficult to perceive, are not used. They have the centre of the crown mottled with white or tawny, the mantle streaked with black, and the bill brownish horn instead of black. Certain little known localities have been verified from Reichenow (1902) or Swynnerton & Hayman (1950).

Eight specimens from eastern Southern Rhodesia agree well in colour with three from north-eastern Tanganyika, one being from Mtoni, in the Bagamoyo District at 6°27′S., 38°49′E., and two from the Usambara Mts. On the other hand, three from further west in Tanganyika, from the Uluguru and Nguru Mts. and from Njombe, may be placed with *anchietae*. Professor E. Stresemann has kindly informed us that nine specimens from eastern Tanganyika in the Berlin Museum agree in colour with *reichenowi*. These include the specimen which he mentions as the type, collected by G. A. Fischer on the Pangani River, five from the Usambara Mts., one from Dar-es-Salaam, one from the Uluguru Mts., and one from Kisaki (5°30′S., 35°30′E.). On the other hand he reports that four from further west, from Songea, Neu-Langenburg and Kissabu (both at the north end of Lake Nyasa), and Urungu-Kitangulu (south-east shore of Lake Tanganyika) are better placed with *anchietae*. He adds that the colour-differences between the two series are similar to those between *remota* and *anchietae* as given by Clancey. Of seven Nyasaland specimens which we have examined, one from Port Herald and one from the Ncheu-Neno boundary, especially the latter, agree best with eastern Southern Rhodesia (*remota*) and eastern Tanganyika specimens (*reichenowi*). On the other hand, one each from Fort Hill, the Songwe River, 20 miles north-west of Karonga, Chinteche and Mlanje are nearer to *anchietae*.

It remains to decide whether *remota* can be distinguished from *reichenowi* on size. The following measurements are available:—

Wing	*Tail*	*Culmen from base*
Eastern Southern Rhodesia (*remota*)		
5♂ 74, 74, 75, 77, 77	72, 73, 73, 74, 74	21, 22, 23, 23, 23
3♀ 73, 74, 75	69, 71, 75	21, 22, 22
Nyasaland (*remota*)		
1♂ 76	75	22
1♀ 76	70	22
Nyasaland (*anchietae*)		
3♂ 73, 74, 75	69, 69, 72	20, 22, 22
2♀ 74, 74	73, 75	21, 22
Tanganyika (*anchietae*)		
3♂ 73, 76, 78	70, 72, 72	21, 22
Tanganyika (*reichenowi*)		
2♂ 71, 75	67, 72	21, 22
1♀ 69	67	21

Professor Stresemann has given us the following wing-measurements of the Tanganyika specimens in the Berlin Museum. A male of *reichenowi* measures 70 mm., three females 72, 74, 78 mm., three others, sex not stated, 69, 69, 73, 74, 74 mm. Three males of *anchietae* measure 75, 75, 77 mm., one other specimen, sex not stated, 76 mm., and 80 mm. in one from Angola.

It seems to us that, while there is a tendency to larger size in *remota*, the difference is not such as to justify its recognition. Accordingly *reichenowi* must be regarded as ranging from Lamu, in coastal Kenya, through eastern Tanganyika to southern Nyasaland and eastern Southern Rhodesia. The position in northern Portuguese East Africa requires further investigation. *Reichenowi* must occur in coastal areas, but it is possible that *anchietae* occurs inland, along the east side of the Lake Nyasa, since a specimen from Mlanje, in south-eastern Nyasaland, certainly agrees better with *anchietae* than *reichenowi*.

Mr. C. M. N. White has examined the specimens with us, and agrees with our finding.

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On western Palaearctic *Anthus pratensis* (Linnaeus)

by P. A. CLANCEY

Received 30th May, 1960

Kenneth Williamson, *Bird Migration*, vol. i, 2, 1959, pp. 88–91, discusses once again the geographical variation exhibited by the western Palaearctic populations of the Meadow Pipit *Anthus pratensis* (Linnaeus), 1758: Sweden, recognising the richly coloured insular populations of Iceland, the Faeroes, and, presumably, "Highland" Britain as subspecifically discrete under the name *A. p. theresae* Meinertzhagen, 1953: Achill Island, western Ireland. Earlier but purely taxonomic papers dealing with the same question are those of Clancey, *Bull. B.O.C.*, vol. lxiii, 1942, pp. 6, 7; *ibid.*, vol. lxviii, 1948, pp. 54–56; and Meinertzhagen, *ibid.*, vol. lxxiii, 1953, p. 43. Vaurie, *Birds of the Palearctic Fauna*, 1959, p. 69, admits the distinction of *A. p. theresae*, the range of which he restricts, following Meinertzhagen, *loc. cit.*, to "Western Ireland", while *A. p. whistleri* Clancey, 1942: Dornoch, Sutherlandshire, northern Scotland, is placed in the synonymy of *A. p. pratensis*.

As correctly pointed out by Williamson in his valuable paper the two names listed above are available for the saturated, western, "Atlantic" populations of this common pipit, but he has unnecessarily complicated the issue by claiming that the *Type* of *A. p. whistleri* is subspecifically indeterminate, and that the name for the enlarged western insular race should be the much later *A. p. theresae*. I believe that there are solid grounds for questioning the validity of the claim that the name *A. p. whistleri* is inapplicable to the western, "Atlantic" race of the Meadow Pipit.

A. p. whistleri was described during the darkest days of the War years on the basis of a comparison between series of freshly moulted autumn and breeding birds collected in the Dornoch district of south-eastern Sutherlandshire in 1938 (August-September) and 1942 (June), and the limited Continental material at that time available in the collections of the British Museum (Nat. Hist.) and Dr. James M. Harrison, of Sevenoaks. It is of importance to note that much of the paratypical series of *A. p. whistleri* consisted of actual breeding birds shot at the type-locality in June, 1942, so that as far as the differential diagnosis is concerned, *A. p. whistleri* is a name correctly given to the breeding Meadow Pipit of the Scottish Highlands and no other. Indeed, the distinctions given for *A. p. whistleri* in the original description are mainly those to be discerned in a critical study of breeding material, though later work on *A. p. whistleri* and *A. p. pratensis* has shown that by far the best and most reliable racial characters separating these two forms are to be seen in autumn-taken birds.

Williamson bases his main argument in favour of synonymizing *A. p. whistleri* on the assumption that the paratypical series was a composite of two distinct geographical races, and that the *Type* of *whistleri* is like Swedish topotypes of the nominate race in juvenile dress. That such a view is scientifically admissible is open to grave doubt. The *Type*, which is in the Clancey Collection, now in the Royal Scottish Museum, Edinburgh, is a bird of the year in the final stages of transitional moult from juvenile to first-winter plumage, and has most of the head, and the whole of the back, body-plumage, wings and tail more or less completely moulted through. It is quite incorrect to state that this *Type*—the actual name-bearer—is largely in juvenile dress and to compare it with others in such plumage. I agree that we cannot be absolutely certain in the light of our new knowledge on migration that this bird was hatched from a nest in the type-locality in the north of Scotland, but the inescapable indications are that it was. To argue speciously against the validity or applicability of the name *whistleri* on the questionable belief that the bird concerned was indigenous to continental Europe and not Scotland, seems both unsound and unnecessary, especially when the specimen is in a perfectly adequate condition to confirm its initial allocation by me to the western race, of which it is now the *Holotype*. As recently as the autumn of 1958 I compared this very *Type* with the rest of the enormous series of *A. pratensis* now available for systematic work in Edinburgh, and can confirm that it agrees perfectly in the rich rufous olivaceous mantle colouration and pinkish under-parts with a host of other autumn specimens of the occidental race of Meadow Pipit, and not with the rather greener backed and whiter bellied *A. p. pratensis*, which latter race occurs plentifully in the British Isles, as a breeding form in southern and south-eastern England, and as a general winter visitor and passage migrant.

It is satisfactory to see recent work confirm my earlier and officially rejected (*sic*) findings on subspecific variation in the western Palaearctic populations of *A. pratensis*. I submit, however, that the correct name for Williamson's "Atlantic" race of Meadow Pipit is actually *A. p. whistleri*, as argued above, and not the later *A. p. theresae*, which name should now be placed in the synonymy of the former.

Study of the material preserved in the collections of the museums in Stockholm, Copenhagen and Edinburgh in the autumn of 1958 revealed that the range of *A. p. whistleri* is much wider than formerly believed, the race concerned ranging from Iceland and the Faroes to Scotland and Isles, the moorlands of northern and western England, Wales, Isle of Man and Ireland. Specimens from Greenland in the collection of the University Zoological Museum in Copenhagen are referable to the nominate race.

On western Palaearctic *Anthus pratensis* (Linnaeus)

by KENNETH WILLIAMSON

Received 16th June, 1960

I am grateful to Mr. Phillip Clancey for allowing me to see his note on Meadow Pipits, about which I have the following comments to make:—the two collections of August–September 1938 and June 1942, though om the same district of south-east Sutherland, cannot be considered together, for two reasons. Firstly, although the second collection must assuredly represent breeding-birds, Meadow Pipits in June are much too worn and bleached for critical taxonomic assessment. Secondly, the early onset of Meadow Pipit migration through the British Isles leaves us with no guarantee that the August–September collection of 1938 comprises native birds. It may well do so, but of this we cannot be certain. The facts of the case are that a bird which still has a good deal of juvenile plumage (and is quite inseparable from birds of similar age from Sweden, Iceland, the Outer Hebrides, Argyllshire and Lancashire) was selected as type, and the original description clearly refers to this indeterminate juv. > 1st. winter phase and says nothing about the greater saturation of colour above and below which distinguishes the Atlantic race. Thus, whilst it is abundantly clear that Mr. Clancey was the first to appreciate that two distinct populations of Meadow Pipit are present in the British area in autumn, it is unfortunate that he did not revise his diagnosis before Meinertzhagen described—correctly—*A. p. theresae.* As matters stand today, the name *whistleri* is technically a synonym of *pratensis*, and we are left with no option but to use *theresae* for the Atlantic race.

A comparative study of the method of skull pneumatisation in certain birds

by JEFFERY G. HARRISON

Received 10th June, 1960

PART TWO

Method of Pneumatisation in the Starling.

There is very little difference in the method of pneumatisation in the early stages of the Starling compared with the House Sparrow, the difference being in stages 11–13 of the Starling, where the two "windows" in the frontal bones divide into four, stages which were not found by either Nero or myself in the House Sparrow.

The time factor. Ten immature Starlings examined on 2nd October were already fully pneumatised. Assuming that such birds were hatched in early May, this would indicate pneumatisation occurring in approximately five months, but nine others on the same date still possessed "windows" four of them being only half pneumatised. Probably therefore, six months would be the average time as for the House Sparrow.

Method of Pneumatisation in certain Corvidae.

This series of skulls demonstrates that the Carrion Crow, Rook, Jackdaw and Jay pneumatise by the same method and the smaller number of Magpies suggests that they also conform to this method. The method is unlike any of the others studied, notably in stages 9–18, while the last remaining pair of "windows" (17–18) are more centrally placed in the frontal bones than the equivalent "windows" in Starlings and House Sparrows and more irregular than in the pigeons.

The diagram showing the method of skull pneumatisation includes several alternative methods, as is indicated by the arrows. The following table gives the number and species examined, corresponding to the stages illustrated. Stage 19 represents the point at which pneumatisation has just reached completion, the outline of the last remaining "windows" to pneumatise still being visible. Stage 20, the fully pneumatised adult skull is included in view of the findings of Verheyen.

Stage	
1	Carrion Crow 2 Jay 1
2	Jay 1
3	Jackdaw 2 Jay 1
4	Jay 1
5	Jay 2
6	Jay 1
7	Rook 2
8	Jay 1
9	Carrion Crow 1 Rook 5 Jackdaw 1
10	Carrion Crow 1 Jay 3
11	Carrion x Hooded Crow 1 Rook 7
12	Carrion Crow 2 Rook 22 Jackdaw 2 Jay 3
13	Jackdaw 1
14	Rook 6 Jay 1
15	Rook 1
16	Jay 1
17	Carrion Crow 8 Rook 10 Jackdaw 2 Magpie 1 Jay 3
18	Rook 1
19	Carrion Crow 9 Rook 2 Jackdaw 1 Magpie 6 Jay 3
20	Red-necked Raven 2 Hooded Crow 10 Carrion Crow 40 Rook 25 Jackdaw 20 Magpie 30 Jay 150 Chough 1

The time factor. The Carrion Crow appears to be one of the quickest species of those examined to reach full pneumatisation. Four immatures examined on 4th, 6th, 13th and 18th July respectively were already complete and if one assumes that they were hatched in late April, this means that they have taken 2½–3 months to do this. A Rook was practically complete on 23rd June, two others were complete on 27th August, giving a 3–4 month time factor. A Jackdaw was complete on 30th July. Four young Magpies were complete on 15th August, 4th, 12th and 13th September respectively and a Jay by 28th August, so that these species appear to reach completion in 4–5 months.

These findings in *Corvidae* are at complete variance with those of Verheyen, who gave time factors of just over a year for *Corvidae* and included the Jay among those species in which the skull never reaches complete pneumatisation. It is difficult to understand how these differences could occur, but Verheyen was working on osteological material only and of the five skulls of Carrion Crows examined, one dated 28th May still showed two small "windows" and I would think that he has taken this to be from a bird already a year old, whereas I have no doubt that the skull was that of an immature bird of that spring. It is an error which can occur when the skull is not examined in conjunction with the plumage.

Verheyen studied twenty Jays' skulls, nineteen of them dated between September and December, one on 9th March. All showed variable "windows" from which it was assumed that the species does not develope complete pneumatisation. My father, Dr. James Harrison and I have examined between us approximately 150 Jays in adult plumage, all with fully pneumatised skulls, so that we cannot uphold Verheyen's findings.

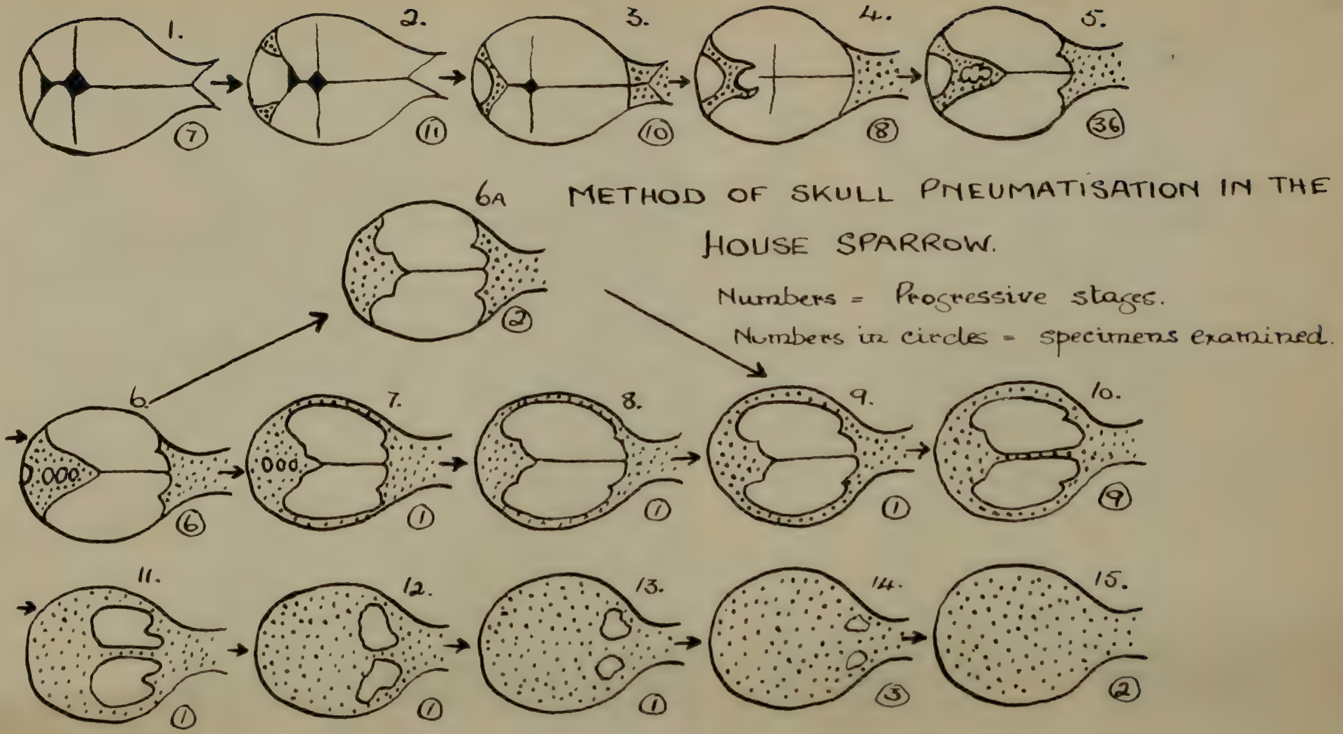

METHOD OF SKULL PNEUMATISATION IN THE HOUSE SPARROW.
Numbers = Progressive stages.
Numbers in circles = specimens examined.
1.
⑦
2.
⑪
3.
⑩
4.
⑧
5.
(36)
6A
②
6.
⑥
7.
①
8.
①
9.
①
10.
⑨
11.
①
12.
①
13.
①
14.
③
15.
②

Diagram 3

METHOD OF SKULL PNEUMATISATION IN THE STARLING

Numbers = Progressive stages.

Numbers in circles = Specimens examined.

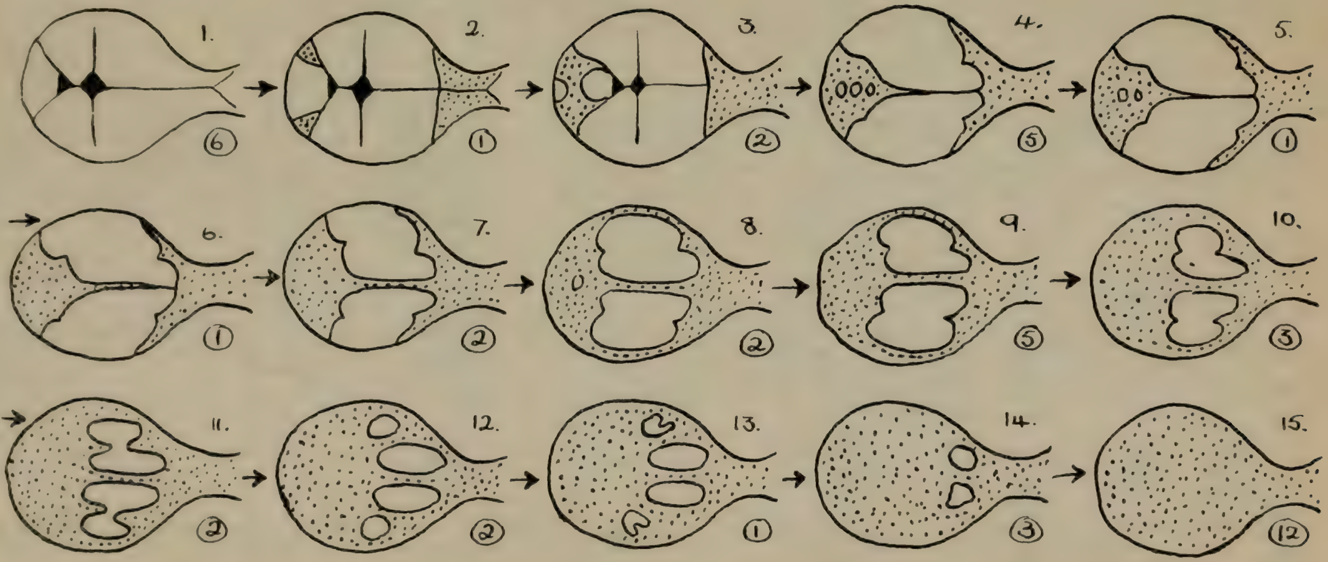
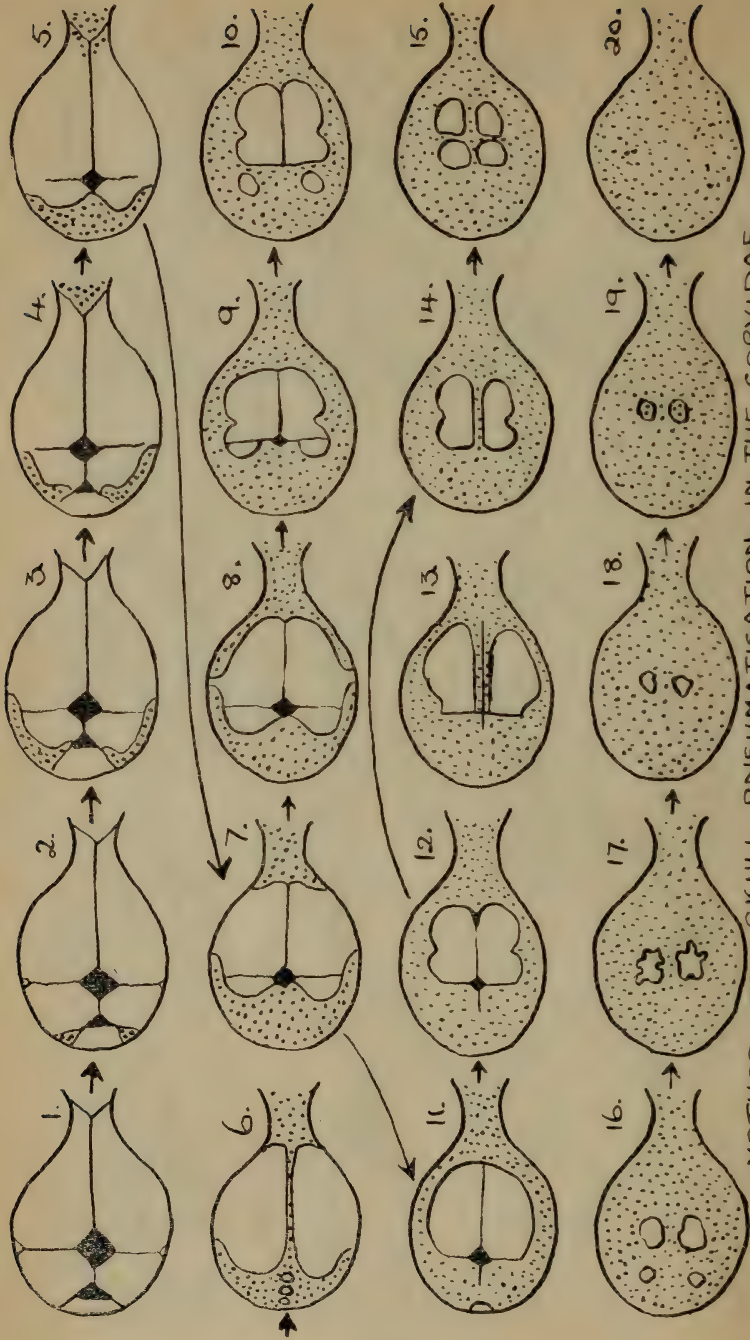

1.
⑥
2.
①
3.
②
4.
⑤
5.
①
6.
①
7.
②
8.
②
9.
⑤
10.
③
11.
②
12.
②
13.
①
14.
③
15.
⑫

Diagram 4


1.
2.
3
4.
5.
6.
7.
8.
9.
10.
11.
12.
13
14.
15.
16.
17.
18.
19.
20.

METHOD OF SKULL PNEUMATISATION IN THE CORVIDAE

Diagram 5

Summary and Conclusions.

1. The method of skull pneumatisation in a number of different species is examined.
2. Certain differences are demonstrated between three pigeon of the Genus *Columba* and two of the Genus *Streptopelia*, the Starling, the House Sparrow and the *Corvidae*.
3. Two groups of closely related species have been studied and although the two groups differ, the species within those groups pneumatise by the same method. (Wood Pigeon, Stock and Rock Dove: Carrion Crow, Rook, Jackdaw, Magpie and Jay.)
4. The method of skull pneumatisation in those species in which it reaches completion, seems likely therefore to provide evidence of systematic relationship.

Acknowledgements. I am particularly grateful to Mr. H. J. de S. Disney for allowing me to see his series of skulls of the Laughing Dove and to the following for their assistance in obtaining specimens for me:— Mr. W. E. Crow, Mr. R. Gillespie, Dr. E. Gleadow, Dr. D. L. Harrison, Dr. J. M. Harrison, Mrs. P. F. Harrison, Mr. J. A. Norman, Mr. G. H. Pattinson, Mr. West, Mr. Westie and Captain J. V. Wilkinson, D.S.C., G.M., R.N. Dr. J. M. Harrison and Dr. D. L. Harrison have both kindly read through this paper and made helpful suggestions, while my wife has assisted me with the diagrams.

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The South African races of the Red-billed Firefinch *Lagonosticta senegala* (Linnaeus)

by P. A. CLANCEY

Received 18th August, 1960

Sclater (1930), Vincent (1952) and McLachlan and Liversidge (1957) admit two geographical races of *L. senegala* from within the limits of sub-continental South Africa (*L. s. rendalli* Hartert, 1898: Upper Shiré R., southern Nyasaland, and *L. s. pallidicrissa* Zedlitz, 1910: Humpata, Huila, southern Angola), while Roberts (1940) lists only one. Study of 180 skins from southern Africa kindly placed at my disposal by the Directors of the East London Museum, the Transvaal Museum (through

Mr. O. P. M. Prozesky), the National Museum of Southern Rhodesia (through Mr. M. P. Stuart Irwin) and the Chicago Natural History Museum (through Mr. Melvin Traylor), reveals the variation in the South African populations to be relatively slight, though sufficient to permit of the recognition of two races.

L. s. pallidicrissa differs only moderately well from *L. s. rendalli.* The adult male of the former race has the red of the sides of the head, throat and breast rather duller and paler (about Old Rose or Old Rose/Light Jasper Red (*vide* Ridgway (1912), pl. xiii) as against Jasper Red (same pl.) in *L. s. rendalli*), while the lower breast, upper abdomen and flanks are a little less buffish and more extensively washed with rose than in *L. s. rendalli.* The upper-parts are also rather paler, less washed with Brownish Olive (pl. xxx), than in *L. s. rendalli.* The differences shown by the females of the two races are not particularly well-marked, but *L. s. pallidicrissa* is generally paler above, and lighter below, the throat and breast rather greyer, less buff, and the lower breast, abdomen and under tail-coverts tend to be whiter. There is no size difference between the two taxa.

L. s. pallidicrissa is now found to have a much more extensive range than formerly believed, and many of the southern African populations classified under the name *L. s. rendalli* by workers must now be transferred to the former race. The nomenclature and ranges of the two races of the Red-billed Firefinch dealt with in this report are as follows:

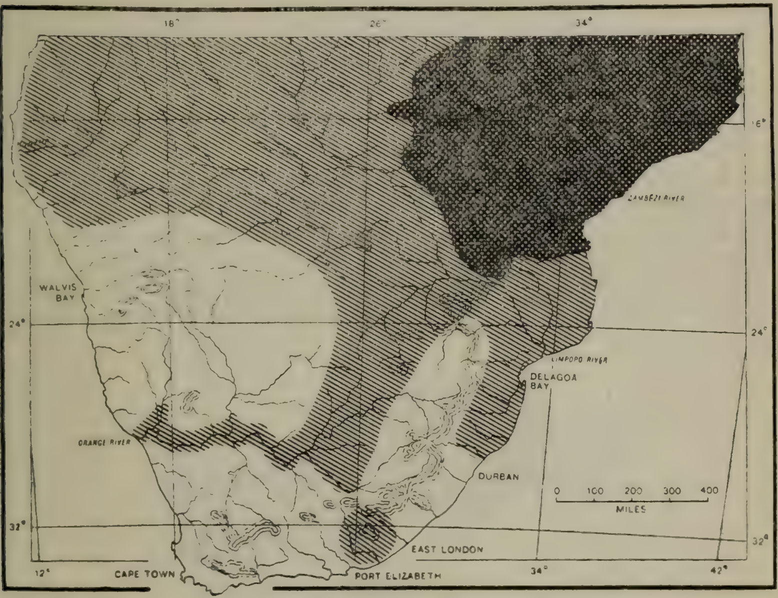
(a) *Lagonosticta senegala rendalli* Hartert
Lagonosticta senegala rendalli Hartert, *Novitates Zoologicae*, vol. v, 1898: Upper Shiré River, southern Nyasaland.

Ranges from southern Tanganyika Territory (specimens from Luwipa R.), northern Portuguese East Africa, southern Nyasaland, and eastern and south-eastern Northern Rhodesia (mainly in Luangwa R. valley), southwards to central and eastern Southern Rhodesia and southern Portuguese East Africa to the north of Sul do Save. Intergrades with *L. s. ruberrima* Reichenow, 1903: Bukoba, L. Victoria, over a wide area in north-eastern Northern Rhodesia, and doubtless in parts of Tanganyika Territory, and with *L. s. pallidicrissa* in west-central Northern Rhodesia, western Southern Rhodesia, and along the southern periphery of its range. The status of this form in the southern parts of the Belgian Congo is in doubt (see Chapin (1954)). There is some indication of local movement in firefinch populations, and such specimens of *L. s. rendalli* as have been obtained in the Congo (which is within the breeding range of *L. s. ruberrima*) may have been visitors from further to the south-east. I have before me a single male of *L. s. rendalli* from 4 miles N.W. of Molepolole, eastern Bechuanaland Protectorate, *ex* the collection of the National Museum of Southern Rhodesia, taken on 10th May, 1958 (N.M. No. 36422). Molepolole is in the central portion of the south-eastern sector of the range of *L. s. pallidicrissa*, and the specimen concerned is clearly a migrant from elsewhere.

(b) *Lagonosticta senegala pallidicrissa* Zedlitz,
Lagonosticta senegala pallidicrissa Zedlitz, *Ornithologische Monatsberichte*, vol. xviii, 1910, p. 173: Humpata, Huila, southern Angola.

Ranges from southern and south-western Angola, western Northern Rhodesia (including Barotseland), and adjacent northern South-West

Africa (Kaokoveld, Ovamboland, northern Damaraland and the Caprivi Strip), southwards through northern and eastern Bechuanaland and western Matabeleland, Southern Rhodesia, to the northern and north-western Cape Province (mainly Vaal R. and Orange R. valleys), Orange Free State, Transvaal, parts of the eastern Cape Province, Natal (local) Zululand, Swaziland, and Sul do Save, southern Portuguese Eastern Africa.


18°
26°
34°
16°
ZAMBEZI RIVER
WALVIS BAY
24°
24°
LIMPOPO RIVER
DELAGOA BAY
ORANGE RIVER
DURBAN
0 100 200 300 400
MILES
32°
32°
EAST LONDON
12°
CAPE TOWN
PORT ELIZABETH
34°
42°

Sketch-map showing the approximate ranges of the two geographical races of the Red-billed Firefinch *Lagonosticta senegala* (Linnaeus) occurring in southern Africa.

Spotted area—*Lagonosticta senegala rendalli* Hartert
Shaded area—*Lagonosticta senegala pallidicrissa* Zedlitz

Note: Of the topotypical population of *L. s. pallidicrissa*, I have before me a sample of 3♂♂, 2 ♀♀ collected by Gerd Heinrich in 1954, mainly at Huila. These agree perfectly with specimens from localities as far removed as Prieska, on the central Orange R., Glen, near Bloemfontein, in the western Orange Free State, and Newington, eastern Transvaal "low-veld".

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12 JAN 1961

Pied Blackbird with symmetrical markings

by Ian D. Woodward

Received 10th May, 1960

It is well known that male Blackbirds *Turdus merula merula* Linnaeus quite often show partial albinism on the breast, which in some appearances resemble Ring-Ouzels *T. torquatus torquatus* Linnaeus; but the effected parts in such specimens are usually asymmetrical.

On 17th April, 1960, I had the opportunity to observe an adult male Blackbird in pied plumage (see Illustration) at Hemel Hempstead, Hertfordshire. It should be noted that a certain amount of speckling was present from the hind neck right around to the breast.

General appearance: As stated, the bird was lightly speckled in parts above the upper-half of its body. These speckles were of a whitish/greyish tinge and it was noticed that these took the form of patches, perhaps more notable on the breast and around the side of the neck.

Throat and head: The most interesting aspect of this bird was the arrangement of the pied parts. Viewed from the front the most striking marking on the bird was the off-white throat patch, which was positioned exactly in the centre of the throat and extending round to the side of the neck. This patch, the main part of which was about half an inch wide, blended gradually into grey/brown below, and this blended into the speckled portion on the breast.

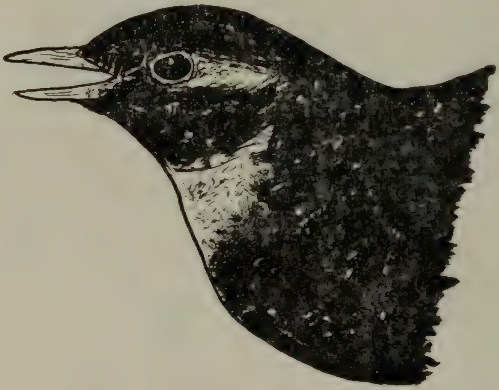

FIGURE I
Side-view of pied ♂ *Turdus merula merula* Linnaeus.
Both sides are identical.

The other notable features of this bird were the eye-stripes extending from the eye back towards the nape. The upper-half appeared a greyish shade and below blended quite abruptly into white—the whole eye-stripe being rather rhombus-shaped and not at all streamlined. Both eye-stripes were identical. Other than the details given above, the bird's field-characters and soft parts were quite normal for this species.

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SUBSCRIPTION

Thirty Shillings Annually. Three Shillings per copy, payable to the Hon. Treasurer, C. N. Walter, Esq., Finsbury Pavement House, 120 Moorgate, London, E.C.2.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent

nd Room

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

-2 ... 1961
PUR...

BRITISH MUSEUM
NATURAL HISTORY

Edited by
DR. JEFFREY HARRISON

Volume 81
No. 2

February
1961

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

-2 FEB 1961
PURCHASED

Volume 81
Number 2
Published: 1st February, 1961

The five hundred and eighty-seventh meeting of the Club was held at the Rembrandt Hotel, S.W.7, on 17th January, 1961.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 40; Guests, 26; Total, 66.

The Chairman welcomed Vice-Admiral Nigel Henderson, the new President of the Royal Naval Bird Watching Association, among the guests.

Two films were shown; the edited edition with sound track of Bayar Read's *The Birds of East and Central Africa*, loaned from the Fauna Preservation Society and *The Loch Ness Monster*, a short sequence filmed and enthusiastically explained by Mr. T. N. Dinsdale.

Song variation in the Great Tit, *Parus major newtoni*

by R. G. FINNIS

Received 24th October, 1960

Song variation in the Great Tit is so well known that a list of descriptions including such terms as "saw-sharpening", or just plain "sawing"—often rendered "TEACHER", "bell-ringing" and "the anvil note" are used at times. Koch, 1955, stated that he had heard sixty-eight different songs although at that time he had recorded about twenty only, while Nicholson (1936) wrote . . . "for no other British bird uses such a wide variety of different notes." *The Handbook*, p. 247 gives "Chief form of "song" is so-called "saw-sharpening", a strongly metallic "*tee*chu-*tee*chu-*tee*chu-*tee*chu . . .", "*tee*chuwee-*tee*chuwee . . .", etc. Diversity of vocabulary is most conspicuous in numerous other derivative or distinct song-phrases, of which same bird may use several in succession. Most are repetition of one, usually disyllabic or trisyllabic component of generally more or less loud, sometimes bell-like, notes, but more complex components of several syllables also occur . . ." Also p. 247 it is stated "Great Tit, which has most varied repertoire of all, (common tits) is so prolific in variations and combinations, and these seem so little stereotyped, as to defy concise treatment, and really adequate analysis has yet to be made . . ."

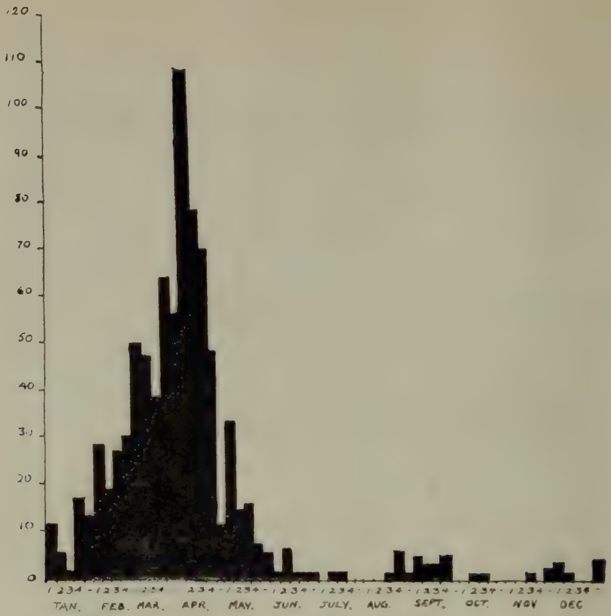

FIG. 1. TOTAL SONG

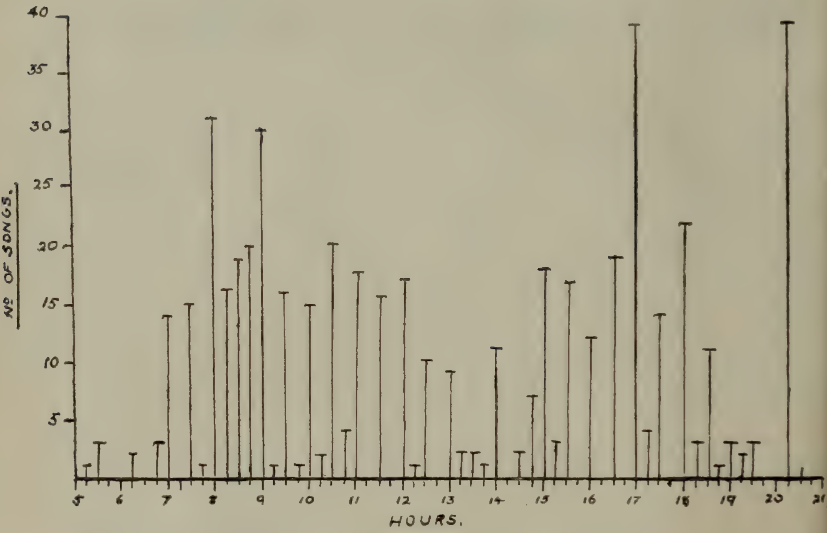

FIG. 2. SONG TIMES.

With these facts in mind I have attempted an examination of song types during the years 1954-59 inclusive, in North Kent, mainly around Gravesend, using a diagrammatic form of song recording where possible in order to discover the frequency with which certain song variations occurred and also to examine the relationship, if any, between these. It should be stated that I have not observed marked birds during this survey. Songs were counted as a fresh utterance when either, *i* a bird had changed its position and started to sing again from a new perch some distance away or *ii* had stopped singing its song for a period of time longer than the natural pauses of a song sequence e.g. when a bird had been singing the "sawing" song I have not counted the number of separate sawing phrases, but only from the fresh start of a sawing sequence irrespective of the phrases sung. Emphasis was noted by a heavier line, pitch by writing the symbols at different levels, cf. North M.E.W.

The term Phrase is used here to denote sawing and Component for the disyllabic and trisyllabic utterances of the second and third variations described cf. *The Handbook*, p. XVIII.

The Song Period. The total of all song types for the period surveyed is shown in Fig. 1. It can be seen that although some song was uttered in all months of the year, the main Song period occurred between the end of January and third week of May which agrees well with the song chart given in *The Handbook*.

Song Times. The times of singing of four hundred and eighty-one songs are shown in Fig. 2. Two song peaks occur, between 8 a.m. and 9 a.m. and 5 p.m. and 6 p.m. There is fairly general singing during the morning and afternoon.

Main Song types.

During this investigation I have tabulated three main song types,

i. The Sawing Song.
ii. A trisyllabic component with emphasis placed on the single note.
iii. A trisyllabic component with emphasis placed on the double notes.

i. "Saw-sharpening" is easily the type of song most frequently heard. During this investigation I have recorded five hundred and eighty-one examples of it, Fig. 3. It consists of two components,—the "TEE" note, emphasised, alternating with "CHU", Fig. 6a.

One bird watched at close range "sawing" opened the bill for the "TEE" and closed it for the "CHU" notes.

The tempo of this song is varied, it is also pitched variously and with wide differences in timbre (some songs are very harsh) considerable variation is achieved.

Sometimes the sawing phrases are of long duration, at other times much shorter while occasionally a phrase of sawing is interrupted by an extra note interpolated to give a jerky presentation. Another variant consists of detached notes Fig. 6b.

On 6th February 1956, I heard a rapid delivery of seemingly detached sawing notes Fig. 6c. and it was significant that at about fifty yards range the accented notes sounded like three disconnected notes.

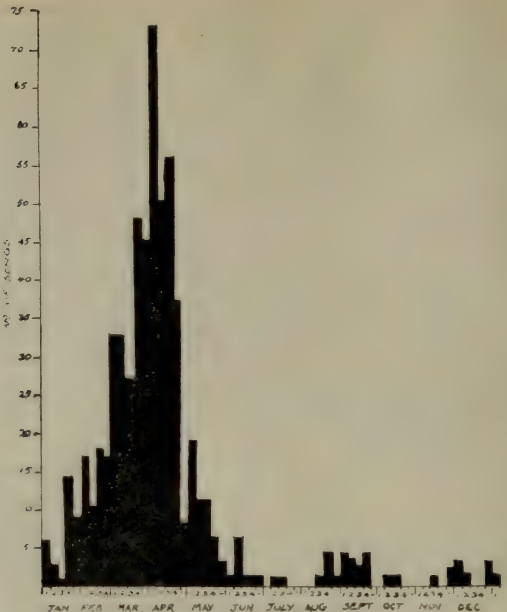

FIG. 3 THE SAWING SONG

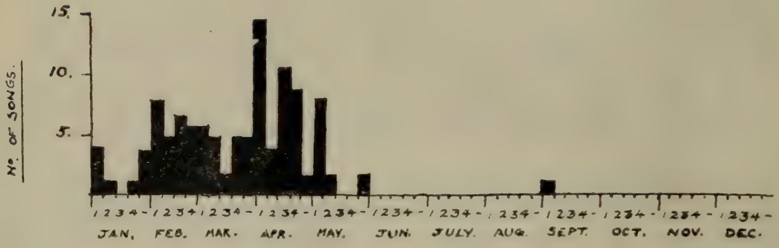

FIG. 4. / ıı / ıı / ıı

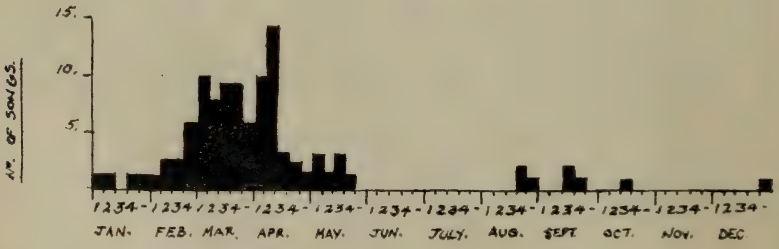

FIG. 5. ▮▮ / ▮▮ / ▮▮ /

Another interesting variation consists of a curiously yodelled "CHU" note Fig. 6d, alternatively emphasis is placed on the yodelled note, Fig. 6e.

On 16th February 1956 an extension of this variation was heard, Fig. 6f. Also on this date I heard a variation difficult to indicate which I rendered as in Fig. 6g.—the wavering note synonymous with the "TEE" note.

These latter variations are an interesting link with the second song type.

Usually this species sings from cover but occasionally it launches into flight across an open space singing as it does so.

ii. The second most frequently uttered variation—one hundred and eight recorded utterances Fig. 4—is a rhythmic trisyllabic with emphasis placed on the first note, the "TEE" of the sawing song, Fig. 6h.

This component is at times pitched differently and with varied tempo.

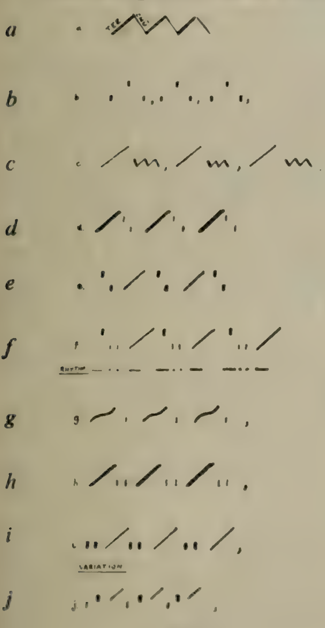

FIG 6.

Once I observed one bird of a pair uttering this song in a flight of about fifty yards.

iii. The third variation—one hundred and five examples Fig. 5—is similar to *ii.* but the emphasis is reversed. Again as in *ii.* there is a variation in which the pitch of the disyllabic changes, Fig. 6i. The song tempo may also vary considerably, e.g. Fig. 6j.

A bird silhouetted against the sky and observed at close range kept the bill open all the time it sang while its throat was working continuously.

On a March evening at dusk I heard a Song Thrush *Turdus ericetorum*, which was singing strongly, deliberately utter eight and then seven equally spaced examples of this song. In view of the tendency of both species to mimic other songs it is possible that this bird was imitating a Great Tit *Parus major*. On the other hand it could easily be the reverse. However, considering the frequency with which this component occurs in both species' songs, I suggest that in this instance mimicking has not wantonly taken place.

It is interesting to note that I once heard this component from a distance of about one hundred yards when the "TEE" note was inaudible resulting in a rhythmic repetition of paired notes.

CONCLUSION

In this investigation I have attempted to tabulate song variations at the time of utterance by a simple diagrammatic form.

It is suggested that in the area under review there appeared to be three main song types with greater variation developed from a juxtaposition of the notes, together with change in pitch and tempo.

Some variation may result accidentally depending upon the distance from which a singing bird is heard, when weaker carrying notes become inaudible.

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A new subspecies of the Nubian Bustard

by CHARLES VAURIE

Received 24th October, 1960

The Nubian Bustard (*Neotis nuba*) inhabits the scrubby regions of the semi desert from the Red Sea Hills of the Sudan southwestward to the region between Abu Hamed on the north and Khartoum in the south, and then westward to Kordofan, Darfur (perhaps), Chad north to the Ennedi, and Niger Territory north to southern Aïr. It is not well known and relatively few specimens are in collections. The American Museum of Natural History has five specimens, three adult males and one adult female captured in Kordofan which died in the Giza Zoological Garden, and one adult male shot by Captain Angus Buchanan in Niger Territory at Taberghi, south of Agadès, "six or seven days north of Tanout", on 4th July, 1922.

This last specimen suggests strongly that a different subspecies inhabits the western end of the range of the species for which I propose the name:

Neotis nuba agaze[1] Vaurie, new subspecies

Type: Taberghi, as above; A.M.N.H., catalogue no. 547514.

Description: Differs from nominate *nuba* Cretzschmar, 1826, type locality, Kurgos, near Shendi, Sudan, by being paler and less heavily and darkly vermiculated with brown on the back, rump, upper tail coverts, tail, and upper wing coverts, and also by being banded with blue-grey on the upper breast beneath the chestnut band, with a few feathers speckled slightly with pale brown, whereas this grey band is lacking in the specimens from Kordofan, the feathers in the latter beneath the chestnut band being barred or well speckled with darker brown. *Agaze* differs also very distinctly from nominate *nuba* by being smaller, by having a proportionately shorter tail, and much weaker feet.

Measurements: *Agaze*, adult male, wing length 418, tail 177, tarsus length 114, anterior-posterior thickness of the tarsus measured half way down its length 7.5, length of middle toe 45, length of the bill from the skull 63, length of the bill from the anterior border of the nostril 28. In the three males from Kordofan, these measurements are, respectively, 425, 440, 455; 252, 260, 278; 119, 120, 122; 11, 12.5, 13; 57, 59, 60; 73, 74, 75; and 36, 37, 40. In the female from Kordofan, 408, 219, 119, 12, 57, 65, 33.

The specimen from Taberghi is in the last stages of the moult. Its fourth primary (the fourth and fifth primaries are longest in this species) appears to be nearly full grown and the longest tail feathers appear to be full grown as I cannot find traces of a sheath at their base. I may add that virtually all the feathers of the body are very fresh and unbleached.

---

[1]. The native name of this bird in the language of the Tuaregs.

Discussion: Hartert (1924, *Novitates Zool.*, vol. 31, p. 9) has discussed the specimen from Taberghi and says it may represent a new subspecies but that he could not decide because the difference [in coloration] might be individual and that he was "convinced" it had been wrongly sexed, adding "should it be a male, it would of course be a very much smaller form! [than nominate *nuba*]." Apparently, the females of *Neotis nuba* differ from the males only by being smaller, but Hartert's belief that Buchanan's bird is a female is only an assumption, though perhaps correct. Buchanan was a most conscientious collector. The many hundred of his skins that I have seen are "all they should be", as Hartert states, very well prepared with full data and apparently correctly sexed. At any rate, whether correctly sexed or not, the specimen from Taberghi differs quite distinctly from the female from Kordofan and I believe the differences are too numerous to be merely "individual". Hartert states that "Buchanan says it is a young male", but I cannot account for this statement as Buchanan made no notation that it was immature on his label. It appears to me to be adult as it did to Hartert.

The validity of a substitute name

by S. DILLON RIPLEY

Received 25th May, 1960

In my review of the Thrushes (Postilla, 1952, 1954, No. 13 p. 23 et add. p. 1) I provided a substitute name for an Iranian subspecies of the Bluethroat, *Erithacus svecicus* or, as may be preferred by some authors, *Luscinia svecica*.

The original names involved were as follows:

Cyanecula wolfi magna Zarudny and Loudon, 1904, Ornith. Jahrb. p. 225, Bidesar, Arabistan (=Khuzistan, southwestern Iran *vide* Vaurie, Bds. Pal. Fauna p. 385.)

This name I believe is preoccupied in the genera *Erithacus* or *Luscinia* by:

Philomela magna Blyth, 1833 (Aug.), Rennie's Field Nat. vol. 1, p. 355, a substitute name for *Sylvia Philomela* "Temminck" = Bechstein, 1802; which see also, Blyth, 1833 (May), Rennie's Field Nat. vol. 1, p. 200, here called *Philomela major*.

In the *Birds of the Palaearctic Fauna*, 1959, p. 385, Dr. Vaurie rejects my substitute name on the basis of Copenhagen Decisions No. 115, I.C.Z.N. 1953, that a name published as a synonym without independent description should be rejected as from some future date when the new International Regles are published. Dr. Vaurie states that *Philomela magna* Blyth 1833 is a *nomen nudum*.

I find I must differ. *Philomela magna* is not a *nomen nudum*. Blyth's paragraph (*tom. cit.* 1833 (May), p. 200) is as follows, referring to the British nightingale:

"This renowned songster is of a size, intermediate, between the thrushes and the warblers; at least, he is much larger than any of our British warblers; and one of the continental nightingales, the *Sylvia Philomela* of M. Temminck, (or, as I should prefer terming it, the *Philomela major*), is a still larger bird . . .''

In No. 8 of the same journal, 1833, Aug. on page 355, Blyth published a note correcting various *errata* which reads: ''line 22, for '*major*', read *magna* . . .''

This use of the name *Philomela major* (later carefully corrected by the author to *magna*) as a substitute name for the bird called *Sylvia Philomela* by Temminck is not a *nomen nudum*. Blyth gives evidence in the same publication, page 199, of knowing what work he was talking about, the only argument for calling this citation a *nomen nudum*. If we examine Temminck's Manuel d' Ornithologie, 1820, éd. 2, tome 1, p. 196 and p. 197, we find the Bec-fin Philomèle, *Sylvia Philomela* (Becht.) 1802, an identifiable species. On page 197 Temminck discusses the Bec-fin Soyeux, *Sylvia sericea* (Natter, *ex* MS.), described and therein validated for the first and only time.

Turning back to Blyth, on page 199 of the May issue of Rennie's Field Naturalist Blyth says: ''taken conjointly, and altogether, they seem to intimate, that our nightingale, with the *Sylvia Philomela* and S. *sericea* of M. Temminck, (species closely resembling it), possess sufficient peculiarities to warrant their being placed as a distinct genus''. This latter name in conjunction with the former places Blyth's current reading material exactly.

As an example of the validity of a name used in this fashion, I refer to Zimmer and Vaurie, (1954, Bull. Brit. Orn. Cl. vol. 74, p. 41) in which these authors state that *Pnoepyga* and *Oligura* created by Hodgson in 1844 (Zool. Miscellany, p. 82) are not *nomina nuda* by reason of not being described, but are in fact valid genera as they are associated by citation with valid species.

Thus if on the one hand *Pnoepyga* and *Oligura* are said to be valid by Dr. Vaurie by citation and association, then obviously *Philomela magna* Blyth a correction for *Philomela major* Blyth, a substitute name for *Sylvia Philomela* ''Temminck'' = Bechstein, a valid species, is also not a *nomen nudum*. Thus I believe *Cyanecula wolfi magna* Zarudny and Loudon is a junior secondary homonym of *Philomela magna* Blyth and as such deserves a substitute name. This name I proposed in Postilla, (*tom. cit.*) as *Erithacus svecicus luristanicus*.

I am grateful to Mr. H. G. Deignam for help with Rennie's publication which is not at Yale.

On the Clamorous Reed-Warbler *Acrocephalus stentoreus* (Hemprich & Ehrenberg) in Eritrea

by K. D. SMITH

Received 10th August, 1960

Heuglin originally obtained this species in Eritrea, where he found it breeding in June. The nest was in the fork of a branch in a thick mangrove swamp on the coast, and contained three fresh eggs. The birds sung there all through the summer months. Kittenberger states that he obtained a bird at Assab in 1907. None have been reported since then, and some doubt has been cast on the records. Both Sclater and Vaurie include Eritrea as within the range of *A. s. stentoreus*, but Mackworth-Praed & Grant mention the species in a note only, with the remark that its occurrence on the Eritrean coast requires confirmation.

Mr. Kenneth Williamson has informed me (*in. litt.*) that whilst going through the B.M. collection recently he found that a male collected by myself at Zula, Eritrea on 26th January 1952 is *stentoreus*, having been wrongly identified as *Acrocephalus arundinaceus zarudnyi* Hart. In plumage and measurements, wing 85, it matches *A. s. brunnescens* Jerdon, although the locality is far outside the known winter range of that form. Vaurie gives the northern shores of the Persian Gulf and throughout India to Ceylon. The bird obtained had fully enlarged testes and was singing. I saw many birds singing in the swamps in late May but unfortunately assumed them to be *a. zarudnyi* lingering in winter quarters.

It seems therefore that *stentoreus* breeds along the Eritrean coast, whilst *brunnescens* is a winter visitor. But Williamson also informs me that a February male from S.W. Arabia, where previously unrecorded, also matches *brunnescens*, and as the Zula bird was in breeding condition it seems possible that birds from the southern Red Sea are sedentary and may eventually require a new name. I am grateful to Mr. R. E. Moreau for supplying me with Heuglin's data.

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The African rough-winged Swallows

by C. M. N. White

Received 3rd August, 1960

The genus *Psalidoprocne* has long been treated as comprising a number of distinct species of African swallows. Sclater (1930) listed eleven species, and Peters (1960) listed twelve. One species, *nitens*, stands apart from the rest in having a square (not forked) tail, and occurs sympatrically with fork tailed birds in various places, and is clearly a distinct species. Relationships between the other fork tailed birds have never been analysed, and the main difference between them is to be found in the colour of the metallic gloss, the colour of the under wing coverts (white or grey) and in dimensions. One of them, *albiceps*, however differs strikingly from the rest in having in males a white cap and throat. I shall now present evidence to show that a number of the black species can be combined in a single polytypic species. The data is examined in terms of the geographical distribution in relation to variation.

1. *South and East Africa, north to Kenya and Uganda.*

It has been widely assumed that two species, *holomelaena* (with ashy under wing coverts) and *orientalis* (with white under wing coverts) occur sympatrically in part of this area. Thus Grant and Praed (1955 give a map which shows the distribution of *holomelaena* as continuous from Natal to Kenya and Uganda. The facts are quite different. Typical *holomelaena* occurs from the coast of the Cape Province north to the east Transvaal and Sul do Save, and is then replaced by *orientalis*. No evidence exists to prove the existence of *holomelaena* in eastern Southern Rhodesia where all specimens are *orientalis*. The latter occupies also Portuguese East Africa from about Beira northwards, Nyasaland, the eastern province of Northern Rhodesia, and south east Tanganyika (Lindi, Songea, Tukuyu, Njombe, north to Kilosa). *Holomelaena* reappears again north of them (Kilosa, Morogoro, Dar-es-Salaam, Uluguru, Usambara, Kilimanjaro). The only evidence for overlap in Tanganyika appears to be (a) the birds collected by Loveridge at Kilosa, identified as an adult and an immature *holomelaena*, and a male moulting into adult plumage, and identified as *orientalis*. Loveridge also records breeding at Kilosa, apparently *holomelaena*. I shall discuss below the extent to which these swallows indulge in extensive wandering; as Kilosa lies on the point of transition from *holomelaena* to *orientalis* in Tanganyika, I do not regard this isolated record as evidence that the two are in fact sympatric. Secondly (b) the type locality of *orientalis* is north west of Pangani and north of Dar-es-Salaam where *holomelaena* is recorded. The latter may be a wanderer from inland and *orientalis* the coastal from, since *holomelaena* in East Africa appears to be mainly a bird of higher levels, whilst *orientalis* occurs at sea level in Mozambique and at Lindi. There is thus no evidence whatever to support the map in Grant and Praed, showing *orientalis* and *holomelaena* as sympatric over a wide area, but two anomalous specimens exist collected within the range of other forms but close to places from which they could have wandered. In the interior of Kenya birds like *holomelaena* occur having a range continuous with the northern Tanganyika populations. Grant and Praed have treated these northern populations of *holomelaena* as identical with the southern nominate form and there is very little difference between them, but the northern *massaica* has a slightly longer wing, 110–119 against 105–113 mm., although the tail length and fork is about the same in both populations.

2. *Western forms of holomelaena and orientalis.*

Each of these forms has a more western representative, *ruwenzori* for the first mentioned, and *reichenowi* for the second. The first of these differs from *massaica* in its shorter and less deeply forked tail, whilst wing length agrees with nominate *holomelaena*. The second differs from *orientalis* in a precisely similar manner, and also has the under wing coverts rather greyish tinged; in the latter respect the sharp division between white and grey under wing coverts breaks down as a good specific character. Measurements of the races so far discussed are set out in the following table.

Form	Wing	Longest t. f.	Fork
holomelaena	105–113	82–90	38–49
massaica	110–119	85–99	39–50
ruwenzori	107–114	73–85	28–34.5
orientalis	105–112	76–90	37–48
reichenowi	103–109	72–78	21–27

3. *Northern Congo forms*

From Ubangi to the Uelle and Ituri and the Lendu plateau in the Belgian Congo, and at the Yei area of the Sudan, just across the border from the Belgian Congo localities, another pair of forms is found, much like *orientalis* but with a stronger oily green wash. The western of these, *chalybea*, has grey under wing coverts and occurs from Ubangi and Bamingui to Stanleyville and the Ituri; further north east it is replaced by *mangbettorum* with white under wing coverts. Chapin (1953) has shown that they replace each other between Buta and Titule. The samples of *mangbettorum* show some slight size variations in different localities. Measurements are given below.

Form		Wing	Longest t. f.	Fork
chalybea		93–100	85–94	38–54
mangbettorum	(Uelle)	97–100	85–92.5	41–47
,,	(Lendu)	101–104	79–84	34–37
,,	(Yei)	97–100	78–81	33–38

Whilst it does not seem desirable to subdivide *mangbettorum* on these slight variations, it would seem reasonable to treat both these forms not only as conspecific, but also as races of *holomelaena* in view of the data already discussed. Another problem of a type locality arises with *chalybea* since it was described from Victoria, Cameroons. But all other specimens have come from Ubangi eastwards. Serle never found *chalybea* when collecting in the Cameroons, nor is it represented in the Cameroon material in the Carnegie Museum, Pittsburgh, nor in Bates' Cameroons collections. It seems likely that here again the type locality derives from a bird which had wandered outside its range. The type of *chalybea* was examined by Chapin who considered it to agree with the birds to which the name is applied by him.

4. *P. petiti*

This form differs in colour from all the foregoing in its less black, more brownish general colour and the under wing coverts are white tinged with grey. The wing, 98–105, agrees with the *mangbettorum* populations; the tail, 70–82, averages slightly shorter, whilst the tail fork is shallower, 25–35 mm. The range is from the Obudu plateau of east Nigeria to the Cameroons and through Gaboon south to Brazzaville. The question arises as to whether it should also be considered as conspecific with the birds already considered. Morphologically it would seem to be yet another allopatric form, and the objections to this course depend upon two considerations. Firstly the type locality of *chalybea* which is west of the range of *petiti* in the Cameroons. In view of what has been said above I do not regard this as very important. Secondly the type locality of *petiti* is Landana and of *reichenowi* Chinchoxo; these localities are very close together in the Portuguese enclave of Cabinda. The line of the lower Congo seems to mark the change from *petiti* to *reichenowi*, and in view of the nomadic habits of these swallows, it would seem better to treat them as conspecific until actual breeding colonies of both forms have been found together in this area.

5. *The Ethiopian forms*

All the foregoing birds have the outer tail feather attenuated, whilst the

Ethiopian forms have it broader and blunter. This might be thought to be a specific character, but *oleaginea* of south west Ethiopia in fact is otherwise just like *mangbettorum*, and was confused with it by Grant and Praed and by Cave and Macdonald. *Oleaginea* has a shorter tail, 67–74 and with a shallower fork, 24–29 mm. This would suggest that *oleaginea* can be treated as another race of *holomelaena*, and in that event, so must all the Ethiopian races.

They differ only in their different glosses viz:—
oleaginea (rich oily green); *blanfordi* (steel blue); *pristoptera* (purple-blue); *antinorii* (purplish bronze). The under wing coverts are white.

6. *Other forms*

From Portuguese Guinea and Sierra Leone to eastern Nigeria a single form, *obscura* occurs, its most eastern locality being Kumba, lying at about 1,000 feet in the lower Guinea forest. Here it approaches closely the range of *petiti*, but has not been collected with it. It differs rather strikingly from all the foregoing in having the tail as long or longer than the wing, but in other respects agrees closely with them, being greenish glossed and with dusky under wing coverts. I regard it as a member of the same superspecies, perhaps best left at present as a separate species. Bannerman also lists a specimen from Victoria, suggestive of another wanderer.

Cameroon mountain and Fernando Po are inhabited by an endemic form, *fuliginosa*, dull brown and lacking any gloss. The tail is rather short and has the shallowest fork of any of the forked tail edspecies of *Psalidoprocne*. It seems best to retain it as a species.

Finally there is *albiceps* which is largely allopatric to the other forms from the southern Sudan and Uganda through west Tanganyika to Northern Rhodesia west of the Luangwa Rift as far as Mpika and Fort Rosebery. The female of *albiceps* is rather like the other black species but with a whitish throat, suggesting that the white head of the male *albiceps* is not a very important character. Nevertheless the difference is such that it seems better to retain *albiceps* as a species.

P. albiceps is important in considering the occurance of these swallows in places which appear to lie outside their normal ranges. In Northern Rhodesia *albiceps* is regarded by Benson and White (1957) as migratory, although it is known to breed both in Northern Rhodesia and Nyasaland, and in the north of its range in Uganda.

Moreover there are a number of records of *albiceps* far outside its normal range, which must represent wanderers. E.g. near Fort Jameson and Lusaka in Northern Rhodesia, and at Kasaji in the western Katanga. One or other of the black forms have also been recorded in Northern Rhodesia in localities far from the normal range, including Sesheke in southern Barotseland. The occurances therefore of birds in places which appear to be outside the normal range and within the normal area of another form, which are in any case remarkably few, cannot be regarded as conclusive evidence of sympatry. What is extraordinary is that several of the forms of *Psalidiprocne* appear to have been described from such wanderers, and several type localities are therefore not within the normal ranges of the forms concerned. On the above evidence I conclude that there are only two biogeographic species of *Psalidoprocne*, *nitens* and *pristoptera*. Three forms, fuliginosa, *obscura* and *albiceps* are best given specific rank within the *pristoptera* superspecies, and all the remainder treated as races of *pristoptera* (the oldest name).

In preparing this note I am greatly indebted to Mrs. B. P. Hall for data upon material in the British Museum (Nat. Hist.) and for the trouble she took in measuring them; to Dr. Amadon, Dr. Rand and Dr. Parkes for data about the collections in their charge; and to the National Museum, Bulawayo for the loan of material.

A new form of Spike-heeled Lark from Bechuanaland

by C. M. N. White

Received 18th August, 1960

Mr. R. H. Smithers, Director of the National Museums of Southern Rhodesia has asked me to describe a form of *Chersomanes albofascists* which he recently sent to me for examination, and which appears to be new. I therefore propose:—

Chersomanes albofasciata barlowi subsp. nov.

Description: much paler than either of the other Bechuanaland forms (*kalahariae* and *bathoeni*), and with the upperside much greyer, and lacking any sandy yellow or brown shade; nearest to *erikssoni* of Ovamboland, but still greyer above and with the upperside plainer, due to the reduction in dark streaking; below much paler than *erikssoni*, the middle of the abdomen whiter, and the breast with fine and diffused brown streaking. The rufous on the upper tail coverts is very light and only slightly indicated and the white tip to the tail very narrow.

Type: male collected on 18th January, 1959, at Lake Dow, south of Makaikari, Bechuanaland, by the Barlow-National Museum Expedition. In the National Museum, Bulawayo. No. 39,872.

Distribution: only known from the Lake Dow ares of Bechuanaland. The most north eastern form of the species.

Notes: 14 specimens examined. Named after Mr. C. S. Barlow who has sponsored the National Museum's work in Bechuanaland.

A substitute name for a Philippine Tailor-bird

by Kenneth C. Parkes

Received 22nd September, 1960

In describing a new subspecies of the tailor-bird *Orthotomus atrogularis* from the Philippine island of Negros, I inexplicably overlooked the prior use in this genus of the subspecific name I had chosen. I hasten, therefore, to provide a substitute, as follows:

Orthotomus atrogularis rabori, nom. nov.

Replaces *Orthotomus atrogularis heterolaemus* Parkes, *Bull. Brit. Orn. Club*, 80, 1960, p. 77, not *Phyllergates heterolaemus* Mearns, *Proc. Biol. Soc. Washington*, 18, 1905, p. 86, now *Orthotomus cucullatus heterolaemus* (Mearns).

This name is proposed in acknowledgment of the great debt all modern workers on Philippine birds owe to Dr. D. S. Rabor of Silliman University, Dumaguete City, Negros, for his untiring efforts in collecting and for his many important discoveries of new Philippine forms.

Variation in Macrony Croceus *Vieillot*

x

by C. M. N. White

Received 15th October, 1960

Clancey (Ostrich, 1958) has proposed to recognise three forms of this widespread species, one of them, *tertius*, described there at p. 77, as a new form with type locality Hartley, Southern Rhodesia. Examination of the large amount of material in the British Museum (Nat. Hist.) fails to reveal any regular geographical variation throughout Africa which merits the recognition of subspecies. There is some irregular variation with some populations warmer and redder above, others colder and greyer, and similar variation in the intensity of the yellow underside is apparent. Wear also affects the colour of the upperside, and quite moderate wear induces a greyer appearance. On average the coldest populations occur in the Sudan and in south east Africa. It has been claimed that the south easternmost population should be recognised as *vulturnus* Friedmann on account of its rather large size, particularly shown in tarsus and bill. But West African birds have tarsus 35–38, those of the White Nile 35–38 and those of South Africa 36–39 in birds measured by me. Bills are similarly variable—West Africa 20–22, White Nile 21–23, Kenya 20–21, Southern Rhodesia 20–22, Natal 22–24.5 mm. These measurements do show that the south eastern birds have on an average the longest bills, but although some selected smallest populations do not overlap with these south eastern birds, others overlap appreciably. Only about 30% of the birds known as *vulturnus* can be distinguished by their long bills. Nothing is gained by the formal designation by name of such ill defined variation.

I am indebted to Mrs. Hall for examining the British Museum material with me, and to Mr. M. P. Stuart Irwin for informing me that he also has been unable to see any good grounds for recognising any geographical variation by name.

A new race of the Violet-eared Waxbill *Granatina granatina* (Linnaeus) from southern Portuguese East Africa

by P. A. Clancey

Received 11th November, 1960

In my recent study of geographical variation in the Violet-eared Waxbill *Granatina granatina* (Linnaeus) (*vide Durban Mus. Novit.*, vol. v, 18, 1959, pp. 253–257) I recognise two races, namely, *G. g. granatina* (Linnaeus), 1766: Huila, southern Angola, and *G. g. siccata* Clancey, 1959: near Okahandja, Damaraland, South-West Africa, based on differences in colouration in both sexes. During the course of a recent collecting trip to southern Portuguese East Africa (August–September, 1960) members of the Durban Museum staff collected a sample of pale, small-sized specimens of Violet-eared Waxbills in a new area for the species, which appear to represent an undescribed form confined to the littoral of south-eastern Africa.

Granatina granatina retusa, subsp. nov.

Type: ♂, adult. Near Panda, Inhambane district, Sul do Save, southern

Portuguese East Africa (24° 02′ S., 34° 45′ E.). 17th September, 1960. Durban Museum Expedition. In the collection of the Durban Museum.

Diagnosis: Adult male paler throughout than either *G. g. granatina* or *G. g. siccata*. Head-top and nape about Mikado Brown (*vide* Ridgway, *Color Standards and Color Nomenclature*, 1912, pl. xxix) as against a dusty Russet or Russet/Hazel (pls. xiv, xv) in *G. g. siccata*, and mantle much lighter, being Sayal Brown (pl. xxix) with greyish olive overlay. On underparts, rather less black over the chin and upper throat, and with most of the rest of the ventral surface distinctly lighter (about Tawny (pl. xv) as against Chestnut/Russet (pls. ii, xv) in *G. g. siccata*. Adult female rather paler than *G. g. siccata*, the head-top slightly more yellowish (Buckthorn Brown (pl. xv) as against Ochraceous-Tawny (same pl.). A markedly smaller, shorter tailed race than either *G. g. granatina* or *G. g. siccata*, thus: wings of 3 ♂♂ 53.5, 54.5, 54.5, 2 ♀♀ 53, 55, as against 55.5–60 (57.5) and 56–58 (56.7) in 20 ♂♂♀♀ of *G. g. granatina*, and 57–61 (58.8) and 55.5–59 (57.4) in 20 ♂♂♀♀ of *G. g. siccata*; tails in ♂♂ 62, 62, 66.5, as against 71–77 (74.7) in *G. g. granatina* and 75–82 (78.6) mm. in *G. g. siccata*.

Paratypical material: 3 ♂♂, 2 ♀♀. All adults.

Range: At present known only from the district of Inhambane, Sul do Save, southern Portuguese East Africa.

Measurements of the Type: Wing 54.5, culmen (exposed) 9.5, tarsus 16.5, tail 66.5 mm.

Remarks: The Violet-eared Waxbill appears to be extremely localized in Sul do Save, and during the course of two ornithological expeditions organised by the Durban Museum the species was only once located, when the paratypical series of *G. g. retusa* was obtained. Even in the Panda district the species was only found near one watering point.

Some of the specimens of *G. granatina* available in collections from near Lourenco Marques are referable to the nominate race, and appear to be escaped captives brought from the interior or aviary birds.

The name chosen for the new race is from the Latin *retusus*, blunted, blunt, dull, in allusion to shorter, less acuminate tail, when it is compared with the other two races of the species.

I am grateful to the Director of the Museu Dr. Alvaro de Castro, Lourenço Marques, for the loan of relevant material.

On racial variation in *Zosterops pallida* Swainson, *sens. strict.*

by P. A. Clancey and J. M. Winterbottom

Received 25th October, 1960

In a recent contribution by one of us (P.A.C., 1960) the characters and ranges of two racial groups of populations of the White-eye *Zosterops pallida* Swainson, 1838, *sens. strict.* (*vide* Moreau, 1957), were defined in the light of information derived from a study of new material available in South African museums. In the note in question the populations of the moist east were called *Z. p. pallida*, with a range in the "valleys of the Vaal and upper Orange Rivers (not in Basutoland) and their major affluents (Harts, Modder, etc.)," while those of the dry west were placed as *Z. p. deserticola* Reichenow, 1905: lower Orange River, the range of which was given by Clancey, *loc. cit.*, as "South-West Africa south to northern Little Namaqualand, Bushmanland and Kenhardt (Hartbees River), in the north-western Cape, and south-east to about Prieska and the Asbestos Mountains of the northern Cape." In the east of its range, as given, *Z. p. deserticola* intergrades with *Z. p. pallida*. The arrangement of the populations of *Z. pallida* by Clancey hinged on the accuracy of Vincent's (1952) fixation of the type-locality as Rustenburg, western Transvaal, and, unfortunately, did not take into consideration the recent change of the type-locality proposed by Grant and Mackworth-Praed (1957).

Swainson, the original describer of *Z. pallida*, states that the form "Inhabits South Africa, Dr. Burchell's Coll. No. 43", and Grant and Mackworth-Praed record that the single specimen of this species in the Burchell Collection in Oxford was taken in a grove of acacias about ten miles east of Prieska, northern Cape Province, on 18th September, 1811. On the basis of this information, the two workers concerned advocate the shift of the type-locality from Rustenburg to ten miles east of Prieska. We are in agreement with this proposal to change the type-locality of *Z. p. pallida*, in the light of which *Z. p. deserticola* must be sunk into the synonymy of the nominotypical race, while the eastern populations, *i.e.*, those of the valleys of the Vaal and upper Orange Rivers and of their major tributaries, will now require to be known as *Z. p. sundevalli* Hartlaub, 1865: Caffraria superiore prope Vaal rivier (Hartlaub, 1865).

Z. vaalensis Gunning and Roberts, 1911: Venterskroon, Potchefstroom, Transvaal, a form often kept specifically discrete from *Z. pallida* and *Z. capensis* Sundevall, must be placed in the synonymy of *Z. p. sundevalli*. Moreau, *loc. cit.*, expressed the view that *Z. vaalensis* is not a distinct species but simply a name given to xanthochroic variants of *Z. pallida* cropping up irregularly in the eastern populations. With this view we concur, as recent collecting in the western Orange Free State (Glen, Modder River) has revealed that *Z. vaalensis* and *Z. pallida* occur together in the same flocks, and that birds intermediate between the two forms are also to be found in such assemblages.

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Thirty Shillings Annually. Three Shillings per copy, payable to the Hon. Treasurer, C. N. Walter, Esq., Finsbury Pavement House, 120 Moorgate, London, E.C.2.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

- 6 MAR 1961
PUR

Edited by
Dr. JEFFERY HARRISON

Volume 81
No. 3

March
1961

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Volume 81

Number 3

Published: 1st March, 1961

- 6 MAR 1961

The five hundred and eighty-eighth meeting of the Club was held at the Rembrandt Hotel, S.W.7, on 21st February, 1961.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 38; Guests, 15; Total, 52.

The Chairman opened by thanking Mr. R. A. H. Coombes for all that he had done for the Club in managing the sales of bulk numbers of the Bulletin, which had made such a difference to the Club's finances. Mr. Coombes was having to give up on moving to Scotland and Mr. N. J. P. Wadley was taking over from him.

Passerine migration across the Mediterranean and the Sahara

Mr. R. E. Moreau gave a most interesting talk on this subject, of which the following is a summary as a full account will appear in the Ibis.

By far the greater part of all the insectivorous birds of Europe cross to tropical Africa for the winter. The difficulties of the journey are great, especially in spring. The desert is nearly 1,000 miles wide from north to south and only a small fraction of its surface offers, in oases or mountains, the chance of a bird's resting in the shade by day or of recuperating its strength. The winds are predominantly northerly, so that the migrants have on the whole following winds in autumn, but head-winds in spring, when an ability to fly for some fifty hours practically non-stop seems essential.

Far more birds are seen on the southern coast of the Mediterranean (and in the northern cases of Algeria) in spring than in autumn, when at least twice as many birds must be travelling. This is interpreted to mean that in spring birds break their journey far more than in autumn. There is indeed reason to suppose that a great many birds travel from Europe to tropical Africa non-stop in autumn; but there are baffling differences between species.

The systematic position of the Marbled Teal

by PAUL A. JOHNSGARD

Received 9th December, 1960

Summary

Although the Marbled Teal has always been considered a typical surface-feeding duck, and has usually been included in the genus Anas, *several*

aspects of its behaviour and the structure of the male's trachea indicate that it also has affinities with the pochards, and especially with the genus Netta. *It is therefore suggested that the Marbled Teal be placed in a monotypic genus* (Marmaronetta *Reichenbach*) *and be considered an evolutionary link between the surface-feeding ducks* (*Anatini*) *and the pochards* (*Aythyini*), *but tentatively retained in the former tribe.*

The Marbled Teal (*Anas angustirostris* Ménétriès, *Cat. Rais. Obj. Zool. Caucase*, 1832, p. 58) is a species which, perhaps because of its dull-coloured plumage, has not attracted much attention from students of waterfowl. However, it is a species which is unusual in nearly every respect, including its geographic range which, unlike that of any other duck, is centered around the Mediterranean region. Adults of both sexes are well described by the term "marbled", and the entire plumage is a creamy grey, or isabelline, colour. In contrast to other *Anas* species such as the outwardly similar Cape Teal (*Anas capensis*) (which Delacour, 1956, considers a close relative of the Marbled Teal), the contour feathers have dark grey edges and lighter centres instead of light edges and darker centres. There is a greater similarity between the adult plumages of the Marbled Teal and the South American Crested Duck, which has been traditionally included in *Anas* but which Delacour (1954) considers an aberrent shelduck (*Lophonetta specularioides*). Both sexes of the Marbled Teal have slight nape crests and dark postocular stripes, but these are more conspicuous in adult males. Otherwise, the sexes differ only in bill colour and pattern. The adult male has a uniformly dark bill except for a narrow lighter subterminal bar, similar to that found in various pochard species, whereas the female lacks this bar and has a light yellowish triangular area on each side of the maxilla.

Foremost of the Marbled Teal's plumage pecularities is its lack of a metallic coloured speculum; the colouration of the secondaries is not in any way differentiated from that of the primaries or the upper wing coverts. No other species of *Anas* has such a uniformly coloured upper wing surface, which is reminiscent of certain pochard species such as Red-crested Pochards (*Netta rufina*) and Common Pochards (*Aythya ferina*). In this respect the Marbled Teal differs markedly from the Crested Duck, which has a conspicuous bronze-coloured speculum with a white posterior border.

It is now widely recognised that downy plumage patterns are of great importance in judging evolutionary relationships, and thus the downy plumage of the Marbled Teal is of interest. This plumage, which has been illustrated by Peter Scott (in Delacour, 1956), is a weakly-patterned pale buff and brown, quite distinct from the downy plumages of the Crested Duck or the Cape Teal. Indeed, the back-spotting and eye-stripe are so reduced that the overall appearance is almost more like that of a downy Red-crested Pochard than of a typical member of the genus *Anas*. The juvenal plumage is scarcely separable from the adult plumage, and is thus of no value in judging relationships.

Two aspects of the Marbled Teal's general behaviour are of importance. The first is that the pre-flight, or "flight intention", movements of this species set it apart from all other species of *Anas*. Unlike these species, which use repeated "neck-jerking" movements (McKinney, 1953) before taking flight, Marbled Teal perform rapid "chin-lifting" movements (McKinney, 1953), exactly as are performed by most and probably all species of pochards in the same situation. Secondly, the Marbled Teal dives occasionally when feeding, but normally feeds by up-ending. When diving, it usually opens its wings to assist in submerging in the manner of most (but not all) dabbling ducks. The hallux is no more strongly lobed than in the other species of *Anas*.

Female Marbled Teal lack the strong "quacking" voice typical of *Anas* females, and instead have only a weak note similar to the male's. Thus females lack the "Decrescendo call" (Lorenz, 1951–1953) which is characteristic of every other species of *Anas* which has thus far been closely studied. The female's primary courtship display, in common with all species of *Anas* and pochards (*Netta* and *Aythya*) thus far observed, is the display that Lorenz (1951–1953) has termed "Inciting". The actual movements involved during Inciting vary greatly in different species, but in all they consist of alternated threatening and escape components. In the Marbled Teal the threat aspect consists of an overt threatening approach towards a strange or unfavoured drake, followed by a rapid retreat towards her mate or potential mate. This form of Inciting is more like that of some pochard species (e.g., Red-crested Pochard) than any *Anas* species known to me. Females also perform somewhat simplified versions of the male's major courtship displays.

The male's pair-forming behaviour will not be described in detail here, but a few points should be mentioned. The first is that the male's voice is normally heard only during display, and has been described (Jones, 1951) as a nasal squeak. This is usually uttered as the head is suddenly jerked backwards and downwards onto the back, whereas in the Cape Teal and the other "spotted teal" (Delacour, 1956) the courtship whistle is uttered as the neck is stretched upwards. No species of *Anas* known to me has a male display exactly like this, although the much slower "Bridling" display (Lorenz, 1951–1953) of such species as the Chilean Teal (*Anas flavirostris*) is outwardly similar. Likewise no pochard species has an exactly equivalent male display, but the pochard "Head-throw" (Hochbaum, 1944) functions in the same manner through producing sound by suddenly stretching the trachea to its greatest extent as air is exhaled. A second major display of the male Marbled Teal consists of silently stretching the head and neck out over the water with the bill pointing towards the courted female or towards another male. This display is not typical of any species of *Anas* known to me, but the "Sneak" posture (Hochbaum, 1944) of male pochards is similar in every respect. In common with both the surface-feeding ducks and the pochards, male Marbled Teal "Turn-the-back-of-the-head" (Lorenz, 1951–1953) towards Inciting females at every opportunity.

The most significant of all aspects of waterfowl behaviour, biologically as well as taxonomically, are the behaviour patterns associated with copulation. No other form of behaviour is so rigidly uniform in each taxonomic group, and thus so useful in classification, as pre-copulatory and post-copulatory behaviour. In the species of *Anas*, excluding the Marbled Teal, for which I have personal observations (31 out of 35 species), in every case mutual "pumping" (Lorenz, 1951–1953) of the head is the primary pre-copulatory behaviour. In no case has drinking or preening dorsally been observed, although Cape Teal (*Anas capensis*) sometimes preen behind the wing in the early stages of pre-copulatory display. Among the pochard group I have observed pre-copulatory behaviour in 13 out of the 15 species, and in every case the male (and sometimes also the female) has performed drinking and preening dorsally. A rudimentary form of mutual head-pumping also occurs in one species (*Netta rufina*), and slight head-pumping by one sex only occurs in four other species. In the Marbled Teal pre-copulatory behaviour consists entirely of alternately drinking and preening dorsally, performed synchronously by both sexes, without the slightest indication of head-pumping.

Post-copulatory behaviour is of almost as great taxonomic significance as pre-copulatory behaviour. In the genus *Anas* this is somewhat variable, but in all species thus far observed (19) the male calls once, either with the neck extended vertically or in the ''Bridling'' posture, then swims away from the female or turns and faces her as she bathes. Post-copulatory behaviour in the pochards is known for 13 out of the 15 species. In every case the male calls once immediately after releasing his grasp of the female's nape feathers, then swims away from her in a special ''Bill-down'' posture, with the bill held rigidly downward towards the breast, while the female begins to bathe. Post-copulatory display in the Marbled Teal is exactly like that of the pochard group.

In connection with this most unusual copulatory behaviour of the Marbled Teal, it is of great interest that the only hybrid known involving the Marbled Teal is not with another species of *Anas*, but with the Common White-eye (*Aythya nyroca*), the hybrid being bred in captivity (Gray, 1958). It seems, because of its pre-copulatory behaviour, that successful copulation between Marbled Teal and one of the pochards is more probable than between Marbled Teal and a typical *Anas* species.

One of the most important anatomical differences which separate the *Anas* group from the pochards concerns the structure of the tracheal *bulla* in males. Males of all *Anas* species (34) thus far observed by me or described in the literature have *bullae* which are asymmetrically enlarged towards the left, rounded in shape, and entirely ossified. In all but three of these species the tracheal tube is relatively uniform in diameter and is not markedly larger than that of the female. In one of the three exceptional cases (*Anas querquedula*) the trachea gradually increases in width towards the *bulla*, while in the other two (*Anas versicolor* and *A. punctata*) there is an abrupt enlargement near the middle of the tracheal tube. However, the structure of the male's trachea in at least 13 out of the 15 species of pochards is altogether different. In these species the tracheal *bulla* is of a highly distinctive shape, being enlarged towards the left, with an angular anterior crest, and with several membranaceous *fenestreae* present, the largest located on the flattened left surface. In nearly all species the tracheal tube of the male is larger than the female's and has one or more swellings near the middle, which may be gradual or fairly abrupt. The trachea of the male Marbled Teal has been mentioned by Phillips (1924), but in insufficient detail to be of much value. Therefore the following description, based on a trachea from a male bred at the Wildfowl Trust (specimen PM 60/421), will be presented here.

The tracheal specimen studied is from an immature bird, whose measurements (culmen 43.9 mm., wing 201 mm.) indicate that it was essentially full grown. However, an adult male might exhibit slightly greater tracheal measurements from those presented below. The dried specimen, including the entire tracheal tube, *bulla*, and bronchi, measures 173 mm. The tube length anterior to the *bulla* is 155 mm. The tube is of gradually varying diameter, the widest part, with a diameter of 9.3 mm., is 105 mm. from the anterior tip. There is a diameter of 8.0 mm. or more for a length of 65 mm. near the middle of the tube. The minimum diameter of 3.1 mm. occurs just behind the anterior tip, while the diameter of the tube a few mm. anterior to the *bulla* is 4.1 mm. Thus the tracheal tube agrees with the pochard type in its gradual enlargement towards the middle.

The *bulla* is extremely interesting and is unique, differing from those of all other waterfowl known to me (Fig. 1). Although in its rounded, left-sided shape it is very similar to that of a typical *Anas*, it is extraordinary in that it contains numerous membranaceous *fenestrae*, of varying sizes, over most of its surface. One if the largest of these is a roughly triangular *fenestra* on the lower left side of the *bulla*. This *fenestra* in undoubtedly homologous with the largest *fenestra* of the *bulla* of male Aythyini, which covers most of the flattened left surface of the *bulla* in these species. In pochards there is also an angular crest of bone above this *fenestra*, on the other side of which numerous smaller *fenestrae* occur. Although this crest is lacking in the bulla of the Marbled Teal, the spacial relationships between the two types of *bulla* are fairly obvious.

The second major way in which the Marbled Teal's *bulla* (and those of typical *Anas* species as well) differs from those of pochards consists of the fact that the right chamber is somewhat inflated in pochards. This is only slightly indicated in the Marbled Teal, but a distinct inflation of the right chamber and a corresponding development of an angular crest of bone flanked on both sides by *fenestrae* is clearly apparent in the *bulla* of the Pink-headed Duck (*Rhodonessa caryophyllacea*), as shown in the illustrations of Garrod (1875) and Beddard (1898). Thus the very different tracheal *bulla* types of *Anas* and the *Netta-Aythya* group are neatly bridged by the intermediate types present in the Marbled Teal and the Pink-headed Duck, and a close relationship between the tribes Anatini and Aythyini is thereby indicated.

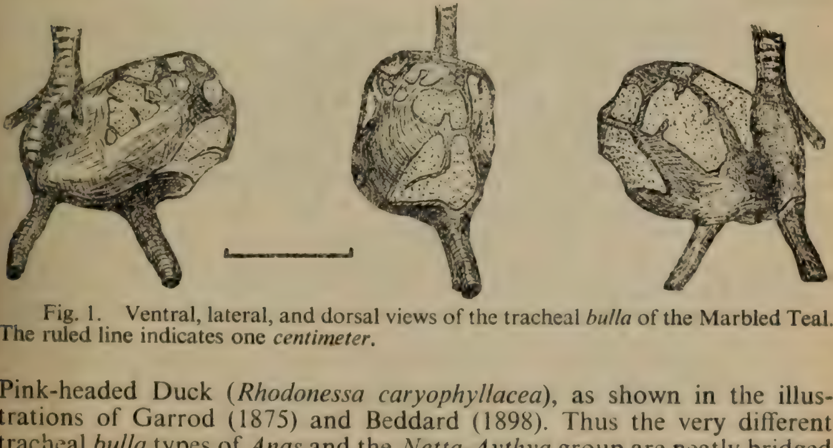

Fig. 1. Ventral, lateral, and dorsal views of the tracheal *bulla* of the Marbled Teal. The ruled line indicates one *centimeter*.

A summary of the Marbled Teal's behavioural and antomical characteristics will be listed below, as an aid in a final evaluation of the probable affinities of the species.

Character	*Description*	*Suggested Affinities*
Body plumage	Isabelline, similar to Crested Duck	Anatine
Wing pattern	Speculum absent, secondaries grey	Aythyine
Downy plumage	Weakly patterned, with faint eye-stripe	Intermediate
Pre-flight movements	Repeated chin-lifting	Aythyine
Lobing of hallux	Slightly lobed	Anatine
Manner of feeding	Up-ending, sometimes diving	Anatine
Voice and sexual displays	Unique, but with a few pochard features	
Pre-copulatory behaviour	Mutual drinking and preening dorsally	Aythyine
Post-copulatory behaviour	Male swims in Bill-down posture, female bathes	Aythyine
Hybridization	One record with *Aythya*, none with *Anas*	Aythyine
Tracheal tube of male	Varying gradually in diameter, widest near middle	Aythyine
Shape of tracheal *bulla* of male	Left-sided and rounded	Anatine
Structure of *bulla*	With numerous *fenestrae* of varying sizes	Aythyine

From this list it seems clear that the Marbled Teal is not a member of the genus *Anas*, and in the majority of its characteristics approaches more closely the pochard group. However, because of its weakly lobed hallux, surface-feeding tendencies, and rather *Anas*-like adult plumage, I believe that it should tentatively be retained in the tribe of surface-feeding ducks (Anatini of Delacour, 1956). I also believe that it should be placed in a monotypic genus and considered a direct link between the surface-feeding ducks and the pochards. The generic name *Marmaronetta* (Reichenbach, *Av. Syst. Nat.*, 1852, p. 9), has priority and has frequently been used by taxonomists until recently.

The information presented in this paper was obtained while the writer was supported by fellowships awarded by the U.S. National Science Foundation and the U.S. Public Health Service. My appreciation of these organizations is gratefully acknowledged. The tracheal specimen described here has been deposited in the reference collection at the Wildfowl Trust, and I should like to express my appreciation to the staff of the Wildfowl Trust for their assistance in my studies, and to Peter Scott for kindly reading and criticising this manuscript.

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Two new birds from Angola

by Melvin A. Traylor

Received 26th September, 1960

In 1954 Gerd Heinrich collected two males and a female of *Oenanthe monticola* from Mt. Moco and Mt. Soque, Huambo, in the highlands of central Angola, and in 1958 (*Jour. f. Orn.*, 99:357) listed them without subspecific designation. These were the first recorded specimens from inland Angola although the race *albipileata* is found on the arid coast of Benguela. Two other specimens from inland Angola exist, however: a male from Mombolo, Cuanza Sul in the American Museum of Natural History and an immature male from Mt. Moco in the Carnegie Museum, Pittsburgh. These five specimens differ strikingly from all other races of *monticola* (or from any other *Oenanthe*) in having wholly black tails. They may be described as:

Oenanthe monticola nigricauda subsp. nov.

Type: adult ♂ from Mt. Moco, Huambo, Angola; collected 11th October 1954 by Gerd Heinrich. Collector's No. 15982; Chicago Natural History Museum No. 225374.

Diagnosis: differs from all other races of *monticola* in having a wholly black tail with no trace of white. Males differ also in that some specimens (including the type) have black instead of white lesser and middle wing coverts. Compared to *albipileata* the female is a dark slaty gray rather than brownish; compared to nominate *monticola* the female is paler and has the lower belly white. In size *nigricauda* is smaller than *monticola*, about the size of *albipileata*.

Size of type: wing 101; tail 70; culmen 20; tarsus 30.

Distribution: central Angola, confined to the rocky tops of the highest peaks in Huambo and southern Cuanza Sul.

Remarks: Considering only the color pattern of the type, black tail and black wing coverts, a good case could be made for elevating *nigricauda* to the rank of species. However, the four known males exhibit the same type of polymorphism shown by *monticola* in southern Africa. The two adult males from Mt. Moco have black wing coverts, but the immature male from the same locality and the adult from Mombolo have white ones. Similarly, while three of the males have black crowns, the fourth has a gray one. The extent of white on the under parts also varies, being restricted to the lower belly in the two adults from Mt. Moco, but covering the whole belly in the immature and the Mombolo adult. Longer series might show the other south African variants: white crown, black belly and gray phase.

Mayr and Stresemann (1950, Evolution 4: 291–300) have described polymorphism in the genus *Oenanthe*. As they note, one of the chief characters of the genus has been the white or rusty rump and base of tail.

Nigricauda unfortunately forces us to expand the concept of the genus to include exceptional forms with black tails. It is also an exception in being polymorphic with respect to the color of the lesser wing coverts. The most common characters which show polymorphism in *Oenanthe* are the color of the crown, throat and abdomen, and *monticola* of course varies in respect to the whole body plumage. No species is recorded, however, in which the wing coverts vary. The black tail and variable wing coverts would seem to set *nigricauda* off as a very distinct form, but as noted above it shows such close relations with *monticola* that it must be considered at the very least a representative of that form.

Comparative measurements of the different races are:

		wing	*culmen*
monticola (S.W.A.)	4♂♂	113–117 (114.5)	21.5–22 (21.7)
	3♀♀	101, 107, 107	21, 22
albipileata	4♂♂	100–106 (102.5)	19, 19.5, 20
	3♀♀	98, 105, 105	20, 21, 21
nigricauda	3♂♂	101, 101, 101	20, 20, 21
	1♀	99	—

Over two years ago Mrs. B. P. Hall wrote to ask me if we had any *Alethe castanea* from Angola, since she had a juvenal from Gabela which she believed to be of this species. I replied with an unequivocal "no", neglecting to mention that we did have *poliocephala* from the same locality. Shortly thereafter she wrote that since Heinrich had recorded *poliocephala* from Gabela she felt sure that her juvenal belonged to that species, but she wondered why her specimen had a few olive feathers on the crown. Now that I have belatedly examined our *poliocephala* the answer to her query is obvious—the Gabela population is a well marked subspecies, characterized by a reddish-olive crown, which I take pleasure in naming as consolation for her unrewarded prodding:

Alethe poliocephala hallae subsp. nov.

Type: adult ♂ from 15 km. south of Gabela, Cuanza Sul, Angola; collected 12th August 1954, by Gerd Heinrich. Collector's No. 15401; Chicago Natural History Museum, No. 224892.

Diagnosis: differs from all other races of *poliocephala* by having a reddish-olive instead of gray or olive-gray crown; differs from all other races but *castanonota* of Upper Guinea in having light, chestnut brown ear coverts. In color of the back, *hallae* is like *akeleyae* of Kenya, less rufous than *poliocephala* of Cameroon and Gabon but more so than *carruthersi* of Uganda. In size *hallae* is like *poliocephala*.

Size of type: wing 97; tail 64; bill 19; tarsus 29.

Distribution: known only from the region of Gabela, on the escarpment zone in Cuanza Sul, Angola.

Remarks: Chapin (1953, *Bul. Am. Mus. Nat. Hist.*, 75A: 500) reports that Rudolph Braun has assured him that he collected *Alethe poliocephala* at Quicolungo in northern Cuanza Norte. Without specimens it is impossible to anticipate to which race birds from Quicolungo belong; however, the forests of northern Cuanza Norte are the southern outpost of a number of Lower Guinea forest birds, and the chances are that this population would belong to the nominate race.

Mrs. Hall's juvenal was taken 12 miles southwest of Gabela, 17th September 1957. It is fully grown and a few adult feathers are beginning to appear on the crown and back. It is a tribute to Mrs. Hall's discernment that she was able to recognize the subspecific differences on the three crown feathers available.

Comparative wing measurements are:

hallae	2♂♂	95, 97
poliocephala	4♂♂	92–97 (94.5).
carruthersi	8♂♂	84–95 (87.5)
akeleyae	5♂♂	96–102 (98.0)
kungwensis	1♂	96

I would like to thank the British Museum for the loan of the juvenal from Gabela and the specimen of *kungwensis*.

Is *Muscicapa gabela* an Akalat?

by B. P. Hall

Received 1st October, 1960

A recent exchange with the Chicago Natural History Museum has given the British Museum an example of *Muscicapa gabela* Rand (1957, Fieldiana 39: 41), a species discovered by Heinrich in secondary forest 15km south of Gabela, western Angola. The rich bright brown of the upperparts and the long legs distinguish *gabela* from all African members of *Muscicapa*, as Rand pointed out, and in subsequent correspondence he has said that he is not wholly satisfied that it was correctly ascribed to this genus.

I believe that *gabela* is not a Flycatcher but an Akalat, and the representative in western Angola of *Sheppardia*, a genus found sporadically in both lowland and montane forest throughout tropical Africa, apparently frequenting the same sort of tangled undergrowth as that in which *gabela* was found. Rand tells me that his chief reasons for not discussing *gabela* in relation to *Sheppardia* were its ''weak, slender feet and 'flycatcher' bill''. The British Museum is fortunate in having the rather rare genus *Sheppardia* well represented, including good series of *S. c. cyornithopsis* from the Cameroons, and *S. sharpei usambarae*, and these series show there is considerable variation in both these characters within the genus, and even within populations. While I agree that the legs of *gabela* are thinner (and also darker) than those of *cyornithopsis*, they can be matched in strength and size with individuals of *usambarae*, while the darker colour may be due only to freshness. Similarly in individuals of *cyornithopsis* the bill is as wide at the base, or even a trifle wider, than that of the one *gabela* examined, while all forms of *Sheppardia* have, like *gabela*, strong, forward-growing bristles.

In neither of these characters therefore is *gabela* generically distinct from the Akalats, nor can I find any other structural difference. In size it is smaller than most *Sheppardia*, with relatively shorter wings, but the measurements overlap those of *usambarae*, as the Table shows.

Similarly there are no differences in colour or pattern that seem of more than specific importance, for though on the underparts *gabela* lacks the bright orange-buff on the throat and breast, characteristic of other forms of *Sheppardia*, traces of an orange wash can be found in the under wing-coverts, on the chin, and in some of the olive feathers of the breast-band and flanks, showing that orange pigmentation is present but greatly reduced. Indeed *usambarae* shows a close approach to *gabela* below, having also an olive breast-band and flanks, but having a dull orange wash on the throat and breast which overlies the olive, making the contrast between the throat and breast less marked than in *gabela*.

In colour the upper parts of *gabela* are close to *cyornithopsis:* the head and mantle are slightly more rufous, less olive, but have the same minute dark edges to the feathers which give a faintly scalloped appearance: the tail is less rufous, closer to that of *usambarae*.

Thus while *gabela* shows significant differences in both structure and colour from *Muscicapa*, it shows none from *Sheppardia*, and I recommend that it should be transferred to that genus. It should be considered as a species, *Sheppardia gabela* (Rand), with affinities to both *S. sharpei* and *S. cyornithopsis*.

The specimens have been examined with me by Derek Goodwin, R. E. Moreau and R. W. Sims, who agree with these conclusions.

TABLE OF MEASUREMENTS

	wing		*bill*		*tail*		*tarsus*	
	♂	♀	♂	♀	♂	♀	♂	♀
cyornithopsis 10♂ 9♀	72–77	67–71	15–16	14.5–16	51–56	45–48	23–26	22–24
usambarae 5♂ 3♀	67–74	65	14–15	14–15	52–55	46–48	22–23	20–21
gabela 3♂ 2♀ (from Rand)	66–67	61–62	14–15	14	50–54	46–48	21	20–21

Note on the relations of the species of Wagtails

by J. M. Winterbottom

Received 1st November, 1960

This note is prompted mainly by Irwin's interesting paper (1960). The genus *Motacilla* dates back to the Oligocene and present-day species fall into several groups. In the first, the tail is about the same length as the wing and the plumage is predominantly black and white. The number of species in this group is open to dispute, but Vaurie (1959) puts the Palaearctic forms into three species, *alba*, *grandis* and *madaraspatensis*, and considers the Ethiopian *aguimp* as conspecific with the first of these. Voous (1959) is more doubtful about this last and I would personally keep them separate. Be that as it may, it is relevant to notice that the Palaearctic forms of *alba* number eleven, whereas the Ethiopian forms number only two and *madaraspatensis*, which is really a tropical species, only just entering the Palaearctic, has no subspecies.

The second group is characterised, in most forms, by having the tail decidedly longer than the wing and by its preference for clear, running, rocky streams. There are two species, the Palaearctic *cinerea* and Ethiopian *clara*, sometimes united. The Palaearctic form is further distinguished by its yellow underparts; and it may be noted that in one Palaearctic subspecies, *M. c. robusta*, the tail is shorter than the wing. There are five subspecies of the Palaearctic *cinerea* and only three of *clara*.

The third group is characterised by having the tail decidedly shorter than the wing and a strong development of yellow. It consists of two

Palaearctic species, *citreola* and *flava*. The first of these comprises three subspecies and the second is so notoriously variable that no two systematists agree on the number of subspecies admissible and there is considerable disagreement on whether these constitute one species or more than one, and, if so, how many.

The remaining species is the Ethiopian *capensis*. Irwin (1960) has given reasons for regarding it as closely related to *flava*, being, in his opinion, an isolated representative of a form of wide Palaearctic distribution and derived from that form. There are certainly resemblances between the two species but these are not, in my opinion, proof of so close a relationship as Irwin infers. *M. capensis* agrees with the *alba* group in having a tail of medium length; it has some slight infusion of yellow in its plumage; and it is divisible into three valid subspecies.

From the foregoing, I would suggest that the genus as a whole has evolved largely in the Palaearctic; that *aguimp* and *clara* are indeed isolated representatives derived from the Palaearctic *alba* and *cinerea* stock respectively; but that *capensis* must be very close to the original form from which the Palaearctic wagtails have diverged, the *alba* group by suppression of yellow and intensification of black; the *flava* group by shortening the tail and increasing the amount of yellow pigment; and the *cinerea* group by lengthening the tail, and increasing the yellow pigment in some cases; and that the variation shown in this last group in respect of both these characters (*M. cinerea robusta* in tail-length and *M. clara* in pigmentation) suggest that these changes have all been fairly recent.

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A variant plumage of the Grey-headed Wagtail *Motacilla flava thunbergi* Billberg

by C. J. O. HARRISON

Received 26th October, 1960

On the 4th August 1960 while studying birds along the Torne River in Northern Sweden, near Haparanda, I observed a variant individual among the local Grey-headed Wagtails *Motacilla flava thunbergi* Billberg. These wagtails were present in scattered family parties along the meadows beside the river. The typical juveniles appeared dark brown on head, mantle, back, and wing-covert, with pale buff on the underside and yellow on the under tail-coverts. The eye-stripe and throat appeared almost white, and the dark stripe on either side of the throat, joining across the breast, almost black.

The variant individual had plumage in which the brown colour was replaced by a clear grey, darker than that of the juvenile White Wagtails *Motacilla alba alba* L. which were also present in that locality. The underside, throat and eye-stripe appeared white, but the under tail-coverts retained their yellow colour.

From its behaviour and call-notes I had no doubt that it was one of a family of Grey-headed Wagtails that were with it.

Had it not been for the locality in which it was seen it would have been impossible to separate it from similar variants which have been described for the Yellow Wagtail *Motacilla flava flavissima* (Blyth). Smith (1950) has a coloured illustration of a pair of such birds seen in Norfolk in 1941. The cock has some degree of yellow colour on the underside and head, but the hen shows none.

I saw a similar hen at Mitcham in Surrey on 24th May 1947, and Milne (1959) records one at Beddington in Surrey in 1957.

There has been a tendency to associate such birds with those which show abnormal head colouration. But the latter varies within the genus, resulting in visible specific differences: Milne (op. cit.) suggests that the abnormal head colouration is the result of intraspecific breeding.

The variant plumage already described appears to be independent of head colouration, and seems to be the result of the absence of a brown pigment in the plumage as a whole.

In many psittacine birds the mainly green colour of the feathers is the result of the combination of a yellow pigment and a blue structural colour in each feather. These are inherited through different genes and it is possible to breed birds which possess one and not the other, being either yellow or blue.

It seems possible that something similar may occur in these wagtails, the olive-brown of the back being a combination of brown and blue-grey, each controlled by a different gene. The yellow colour appears to be either linked with the blue-grey, or independent of either.

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Smith, Stuart. *The Yellow Wagtail.* London 1950.
Milne, B. S. Variation in a population of Yellow Wagtails. *Brit. Birds* 52 (1959): 281–295.

The Kurrichane Thrush *Turdus libonyanus tropicalis* Peters a host of the Red-chested Cuckoo *Cuculus solitarius* Stephens in Southern Rhodesia

by CHARLES R. S. PITMAN

Received 4th November, 1960

There appears to be no previous published record of the Red-chested Cuckoo *Cuculus solitarius* victimizing the Kurrichane Thrush *Turdus libonyanus*. In a communication received from Mr. H. M. Miles, who is the Organising Secretary in Southern Rhodesia of the South African Ornithological Society Nest Record Scheme, he tells me that Mr. C. K. Cooke has recently twice found this Cuckoo victimizing the Kurrichane Thrush at Khami, near Bulawayo, where he has examined dozens of this thrush's nests.

On 14th December, 1958 one of these cuckoos was found alone in a *Turdus libonyanus* nest near his house, which is surrounded by forest.

Next year, on 20th December 1959, he found another Kurrichane Thrush's nest in a Jacaranda tree in his garden. Of the two eggs in the nest one was a normal egg for this thrush, but the other one was a very pale green with a few spots. These spots were all alike rusty brown, some very pale and very small; the eggs were not measured.

On the 22nd December one young had hatched. On the 23rd there were two young in the nest, the cuckoo dark skinned and the thrush pink, but on the 24th a cuckoo nestling was the only occupant. On 31st December it became feathered and the orange mouth was noticed, as were the striped breast and spots on the wings and tail. On 20th January it was fully plumaged, with tail growing larger and some signs of red on upper breast. It was later identified as the Red-chested Cuckoo,

On the 1st January it was removed from the nest and was hand fed on a diet of worms and moths. The cuckoo fluttered to the ground on the 15th day from hatching, but was never heard to make the 'Piet-my-Vrou' call, only feeding noises. It started to feed itself on the 20th day, when it could fly strongly, but it flew a little from the 17th day. It was ringed (with a Pretoria Zoo number C.662).

According to Liversidge, *Ostrich* XXVI (1), Feb. 1955, the nestling period of *C. solitarius* is 20 days ± 6 hours. In the Revised *Roberts' Birds of South Africa*, 1959, the nestling period is given as 17½ to 20 days, which this record also confirms.

Cooke's son taught the cuckoo to fly by making it exercise its wings whilst it was on his hand.

Greater Black-backed Gull with massive infestation of a parasitic worm

by BRYAN L. SAGE AND T. R. LAWSON

Received 2nd November, 1960

On 19th March 1960, a first-winter Greater Black-backed Gull, *Larus marinus* Linnaeus, was found freshly dead at the King George V Reservoir, Lee Valley, Essex. There was no external evidence of injury to account for the death of the bird, and at post-mortem examination the only abnormal findings were within the abdominal cavity.

The abdominal organs and the anterior abdominal wall were covered with extensive deposits of fat. The peritoneal cavity contained a small quantity of blood-stained fluid. An abcess, about 4 centimetres in diameter, walled off by loops of inflamed intestine, was present on the right side under the liver, and contained blood-stained pus with large numbers of a strigeid (trematode) worm subsequently identified as *Cotylurus platycephalus* (Creplin 1825). In several places the abcess cavity was in direct communication with the lumen of the surrounding gut. The oesophagus was normal, and the stomach, which contained a small quantity of bile-stained fluid, was also normal. The intestinal loops in the vicinity of the abcess were inflamed and *Cotylurus platycephalus* was adherent in large numbers to the mucosal wall from the duodenum to the recto-intestinal junction, with a maximal concentration in the terminal 15 centimetres of the intestine. The intestine, when opened, presented a somewhat similar appearance to that shown in the plate illustrating the paper by Soulsby and Harrison, to which we refer below. The rectum itself was free from infestation.

The bird was a female, with a single ovary measuring approximately 1.3 x 0.4 centimetres. The cause of death was ascribed to peritonitis from an intra-abdominal abcess and enteritis secondary to massive infestation with *Cotylurus platycephalus*.

DISCUSSION

According to Szidat (1929) Strigeids feed at the expense of their hosts, partly on blood and partly on the altered tissue of the mucous membrane, to which they attach themselves by means of the powerful sucking and clinging apparatus situated on the anterior portion of the body. The breakdown of the cellular structure of the mucosa is apparently caused by a secretion from certain glands in the clinging organs of the worm. This trematode was originally found by Creplin in the bursa of Fabricius of the Red-throated Diver *Gavia stellatus* (Pontoppidan). Its life history is still imperfectly known, but it seems highly probable that the sequence of hosts is mollusc—fish (probably freshwater species only)—fish-eating bird.

As may be expected *Cotylurus platycephalus* has been found in a wide variety of fish-eating birds, and it has been recorded previously from the Greater Black-backed Gull by Mühling (1898). A recent case in a Herring Gull, *Larus argentatus* Pontoppidan, found on the Isle of Sheppey, Kent, in June 1957 has been described by Soulsby and Harrison (1958). This bird had a large fusiform distension in the upper part of the large intestine, and death was due to acute obstruction. In the present case there was no sign of intestinal obstruction at post mortem. The most remarkable occurrence of this parasite so far reported in the British Isles appears to be that described by Baylis and Lowe (1934) from Littleton Reservoir, Staines, Middlesex, where the death of a large number of Razorbills, *Alca torda* Linnaeus, was found to be due to this cause.

In addition to the species already mentioned other recorded hosts include Great Crested Grebe *Podiceps cristatus* (Linnaeus); Cormorant, *Phalacrocorax carbo* (Linnaeus); White-tailed Eagle, *Haliaeetus albicilla* (Linnaeus); Arctic Skua, *Stercorarius parasiticus* (Linnaeus); *Pomatorhine* Skua, *Stercorarius pomarinus* (Temminck); Long-tailed Skua, *Stercorarius longicaudus* Vieillot; Lesser Black-backed Gull, *Larus fuscus* Linnaeus; Common Gull, *Larus canus* Linnaeus; Black-headed Gull, *Larus ridibundus* Linnaeus; Kittiwake, *Rissa tridactyla* (Linnaeus); Common Tern, *Sterna hirundo* Linnaeus; Crested Tern, *Sterna bengalensis* Lesson; and Black Guillemot, *Uria grylle* (Linnaeus).

ACKNOWLEDGEMENTS

We are indebted to Mr. Stephen Prudhoe of the Department of Zoology, British Museum (Natural History) for identifying *Cotylurus platycephalus* and for drawing our attention to references in the literature.

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A New Race of the Little Owl from Transylvania

by DR. ANDREW KEVE AND STEPHEN KOHL

Received 14th November, 1960

The Little Owl of Transylvania has always been regarded as belonging to the nominate form *Athene noctua noctua* Scopoli. However Madarász (1900)[1] commented concerning this population as follows: "In Siebenburgen kommen etwas lichtere mit mehr rötlichem Anflug vor, welche indessem von der mediterraner Form *A. glaux* sehr entfernt stehen." Later Dombrowski (1912)[2] expressed his opinion in the following terms: "Die siebenbürgischen und west rumänischen Stücke sind von den Dobrogeavögeln etwas verschieden, indem selbe zwar auch teilweise etwas licht gefärbt sind, deren Färbung etwas ins Rötliche zieht."

Unaware of these opinions Keve reached the same conclusion as Madarász after investigating 10 examples from Transylvania with Hungarian specimens, and, quite independantly Kohl noted precisely the same differences, the freshly collected material consisted of 13 adult ♂♂, 12 adult ♀♀, 6 adult unsexed individuals, 5 juvenile ♂♂, 3 juvenile ♀♀ and 1 unsexed juvenile.

The above material substantially supports the earlier descriptions of Madarász and Dombrowski and the opinion that the Little Owl of Transylvania is new to science; for this population we propose the name:—

Athene noctua daciae subsp. nov.

Diagnosis: A. n. daciae resembles *A. n. noctua* except that it is somewhat lighter and has a rufous wash on the mantle, though this is not so marked as it is in *A. n. indigena* the rectrices are similar to those of the latter in that they are never barred but only spotted: sometimes even these are lacking. The underparts are slightly paler, in this respect different from *A. n. noctua.*

Type: ♀ Reghin, East Transylvania, 10th July 1957. Coll. St. Kohl, in the collections of the Hungarian Institute of Ornithology. Registered No. D 650.

Allotype: ♂ Dodrád, near Reghin, East-Transylvania, 19th November 1958, Coll. St. Kohl, in the collections of the Hungarian Institute of Ornithology. Registered No. D 651.

The Little Owl of Transylvania is intermediate between *A. n. noctua* and *A. n. indigena.* The upperparts are pale soil-brown lightly washed with rufous. The crown has long whitish striations, the rest of the back is spotted with white. The spotting of the primaries is less contrasting than in *A. n. noctua.* The rectrices are of the same colour as the upperparts or slightly paler. The transverse bars are yellowish and never complete being often reduced to roundish spots or even lacking. A terminal bar is seldom noted. The only difference between the sexes is one of size, the females being the larger. The birds are darkest when in freshly moulted autumn plumage, October to December, and then show a slight violet reflection; this latter character is lost by January. The white underparts also have a slight yellowish wash, but this too disappears by January. The birds are palest in July when also the striations of head become accentuated. The spotting of the underparts is darkest in fresh plumage and fades in July. The greatest variability is found in the rectrices.

Wing Measurements:

♂♂ 153, 157, 157, 158, 160, 160, 160, 160, 161, 162, 162, 163, 164, 165, 166 mm. Average=160.37 mm.

♀♀ 160, 160, 160, 160, 160, 160, 162, 162, 162, 164, 164, 165, 166, 168 mm. Average=162.78 mm.

Distribution: Transylvania as far as the inner slopes of the Carpathians, both in the lowlands and in the hills. In the west as far as the western Transylvanian Alps: in the north as far as the Alps of Radna. The valley of the river Strigy (Streiul) would appear to be the zone between *A. n. daciae* and *A. n. indigena.*

Our thanks are due to Dr. James M. Harrison for reading our paper before publication.

References:—
[1]. Madarász, J., 1900. *Die Vögel Ungarns.* p. 546.
[2]. Dombrowski, R., 1912. *Ornis Romaniae.* p. 406.

African Serpent Eagle in Sierra Leone

by J. H. Harrop

Received 29th November, 1960

Mattru, the headquarters both of the Jong Chiefdom and of the Bonthe District, is situated in the South Western Province of Sierra Leone, rather more than thirty miles up the Jong river from Bonthe. Most of the surrounding countryside is "farm bush", though there are some big trees left along the riverside.

On 31st March 1960, while I was stationed at Mattru, Ronald Albrecht and Ronald Baker, both sons of local missionaries, brought me a bird which they had shot three or four miles north of there, not far from the rapids at Willai. I examined the bird and found it to be a Gold Coast Serpent Eagle, *Dryotriorchis spectabilis spectabilis* (Schlegel). When I saw that this bird was not listed from Sierra Leone in the first volume of Bannerman's *Birds of Tropical West Africa*, I decided to measure and photograph it. Inside the bird's bill I found the end of the tail of what proved to be a Night Adder (*Causus rhombeatus*—Lichtenstein). I was therefore able to take a colour photograph of the Serpent Eagle, with the snake which had been its last prey protruding from its bill.

During the summer, this transparency was sent to Dr. D. A. Bannerman, who fully confirms my identification of the bird as belonging to the Upper Guinea race.

Geographical variation in the South African populations of the Magpie-Shrike *Lanius melanoleucus* Jardine

by P. A. Clancey

Received 31st October 1960

The Magpie-Shrike *Lanius melanoleucus* is a large-sized, pied, gregarious laniid of southern and eastern Africa, of which two geographical races are currently admitted by workers, these being nominate *L. melanoleucus* Jardine, 1831: Orange River, and *L. m. aequatorialis* (Reichenow), 1887: Gasa Mts., 12–14 miles south-west of Kondoa, Kondoa-Irangi district, north-central Tanganyika Territory. At the present time only the nominate race is believed to occur within South African sub-continental limits, though years ago Neumann (1900) arranged the austral populations in two races, when he proposed the name *Urolestes melanoleucus damarensis* Neumann, 1900: Rehoboth, Damaraland, for the populations of South-West Africa and the Kalahari Desert, Bechuanaland Protectorate. Reichenow (1902–1903) rejected Neumann's *U. m. damarensis*, which he placed in the synonymy of *L. m. melanoleucus*, and all subsequent workers have followed Reichenow's example in recognising only the nominate race from Africa south of the Zambesi River. Study of a large panel of skins in the collections of South African museums (East London Museum, Durban Museum, Natal Museum, Transvaal Museum, and the National Museum of Southern Rhodesia) suggests that Neumann's findings are not without some factual basis, and confirms that two races of *L. melanoleucos* can be admitted from within South African limits, one of which will require to be given a name.

The populations of the Magpie-Shrike occurring in Africa south of the Zambesi River can be arranged in two races mainly on the basis of differences in wing-length, and the nomenclature, characters and ranges of these are as follows:

(a) *Lanius melanoleucus melanoleucus* Jardine

Lanius melanoleucus Jardine, *Edinburgh Journ. Nat. Geogr. Science*, vol. iii, 1831, p. 209: Orange River, Cape Province. *Synonyms: Urolestes melanoleucus damarensis* Neumann, *Journ. f. Ornith.*, 1900, 3, p. 262: Rehoboth, Damaraland, South-West Africa. ? *Urolestes melanoleucus angolensis* Meise, *Abhandl. Verhandl. Naturwiss. Ver. Hamburg*, N.F. Bd. II, 1957 (1958), p. 77: Chibia, Huila, southern Angola.

Head, neck and back glossy black, the feathers with a slightly oily texture; scapulars and rump white, the latter with an overlay of pale grey. Under-parts sooty black, the lanceolate feathers of the lower throat and breast with a greyish bloom in freshly moulted plumage. Wings black, the primaries with a prominent white speculum over their basal surfaces, and all primaries and secondaries (including the tertials) broadly tipped with white. The sexes are alike, but the female differs in having large patches of white plumes on the flanks. Wings of 20 ♂♂ 137–145 (140.3), 15 ♀♀ 137–145 (140.0), tails of 10 ♂♀ 298–351 (320.6) mm.
Material examined: 59.

Range: Central and northern South-West Africa, including the Caprivi Strip, the Bechuanaland Protectorate, Bechuanaland (northern Cape Province), western Orange Free State, western and north-western Transvaal, western and north-western Matabeleland, Southern Rhodesia, and extralimitally in southern and south-western Angola and Northern Rhodesia. Irregularly south of the Orange River, having been recorded from Colesberg and near Aliwal North. Intergrades to the east of its established range in the central and northern Transvaal and parts of Matabeleland with the next race.

Remarks: Meise (1957) has recently separated the population of southern Angola as a new race under the name *U. m. angolensis* Meise, 1957: Chibia, Huila, southern Angola. I have not been able to examine any material of this proposed new taxon, so can offer no worthwhile opinion as to its discreteness, but Mrs. B. P. Hall, *in litt.*, kindly informs me that she does not believe that it is valid, a view which is apparently shared by Dr. Austin L. Rand in his treatment of this species in his revision of the shrikes for the continuation of Peters *Check-List*. In the event of these views being followed, *U. m. angolensis* will require to be treated as a synonym of the nominate race. However, Meise, in his original description of *U. m. angolensis*, shows that the name was given to a population of large-sized birds, similar in wing-length to those of South-West Africa, the Bechuanaland Protectorate and contiguous areas to the east and north-east, though shorter-tailed [247–280 (Meise, *loc. cit.*) as against 298–351 mm. (Clancey)] and with the plumage colouration much as in *L. m. aequatorialis*. It seems to me that the status of *U. m. angolensis* is still unresolved and warrants further study.

(b) *Lanius melanoleucus expressus*, subsp. nov.

Type: ♂, adult. Game Farm "Malamala", near Newington, eastern Transvaal lowveld, South Africa. 20th July, 1952. Collected by P. A. Clancey. In the collection of the Durban Museum.

Diagnosis: Similar to the nominate race as defined above, but of markedly smaller size, most noticeable in the shorter, rounder wing (♂♂ 127–137.5, ♀♀ 125–137, as against 137–145 and 137–145 mm.). Also with a pronounced tendency to have the white apical spots to the primaries and secondaries (including the tertials) smaller, and with the white of the rump more sullied with grey. Rectrices tending to be narrower.

Wings of 20 ♂♂ 127–137.5 (133.1), 15 ♀♀ 125–137 (132.2), tails of 10 ♂♀ 273–353 (305.2) mm.

Material examined: 58.

Measurements of the Type: Wing 132, culmen from base 25.5, tarsus 38, tail 328 mm.

Range: Natal and Zululand from about the basin of the Tugela River, northwards in the eastern lowlands through Swaziland, Sul do Save, southern Portuguese East Africa, and the eastern and north-eastern Transvaal to south-eastern and eastern Southern Rhodesia, the lower Zambesi River valley, and southern Nyasaland.

Remarks: The name of the new race is from the Latin *expressus*, clear, evident, prominent, etc.

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Neumann, O. *Journ. f. Ornith.*, 1900, 3, p. 262.
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On the question of the occurrence of Peters' Twinspot *Hypargos niveoguttatus* (Peters) in Sul do Save, Southern Mozambique

by W. J. Lawson

Received 8th October, 1960

Pinto & Lamm (Ostrich 30, (2), 91, 1959.) in fixing the type-locality of *H. niveoguttatus* at Tete, Mozambique, state, "We are satisfied that in

Mozambique *niveoguttatus* does not occur south of the Save River.'' During a recent expedition into southern Mozambique, organised by the Durban Museum, it was learnt from Mr. C. H. ''Jack'' Scheepers, of Bela Vista, of the occurrence of *H. niveoguttatus* in the Sul do Save at Chimonzo, in the Macia district, about 100 miles north of Lourenco Marques. This area was well worked by the Durban Museum party, and a number of specimens of *H. niveoguttatus* were collected. This species was found to be abundant in the evergreen forest at Chimonzo and especially in scrub tangles around native cultivations. On examination of the specimens of *H. niveoguttatus* in the Museu Dr. Alvaro de Castro, Lourenco Marques, a single male specimen (No. 5873) from Macia was found. It had been collected by Dr. A. A. da Rosa Pinto on 22nd August, 1956, in an area obviously close to that in which we operated.

In making the above quoted statement, Pinto appears to have overlooked the fact that he had collected *H. niveoguttatus* south of the Save River, in an area in which we found the bird abundant. Mr. C. H. Scheepers, who knows the area well, informs me that the Chimonzo and Macia population is an isolated pocket of the species, restricted to the Macia district, and that to the best of his knowledge does not occur elsewhere in this region. *Hypargos margaritatus* (Strickland) is not known from the area in which *H. niveoguttatus* occurs.

It is of interest to note that many years ago H. F. Francis collected a specimen of Peters' Twinspot at the type-locality. Through the courtesy of Dr. J. M. Winterbottom, Honorary Ornithologist of the South African Museum, Cape Town, I have been privileged to examine this specimen. It is an adult male collected on the 1st October 1899 at an unspecified locality ''North of Port of Inhambane'', at which locality Francis stated that it was ''Not uncommon''. (see also *Ibis* 1899, p. 285). In addition to this D. T. Cole (*Ostrich* 28, p. 192) records observing a single male specimen in dense bush at Chicumbane, a locality approximately 125 miles north of Lourenco Marques, slightly further north than Chimonzo, where I found the species to be common in 1960, indicating that the populations of Peters' Twinspot in the littoral of Sul do Save to the north of Delagoa Bay is reasonably extensive.

The occurrence of this isolated population of *H. niveoguttatus* within the established range of *H. margaritatus* makes it doubtful if these two species can be correctly regarded as conspecific, as has been suggested. All specimens of *H. niveoguttatus* from Chimonzo and Macia are typical of the species.

The finding of Peters' Twinspot far south of the Limpopo River is a noteworthy extension of range, and raises the question of the wisdom of adjusting the original type-locality as given by Peters (J.f.O., 1868: 133) from Inhambane to Tete as given by Pinto & Lamm, *loc. cit.* Indeed, there is now every reason to believe that Peters did obtain the original specimens where he stated (Inhambane) and that no error occurred. Very large numbers of *H. niveoguttatus* have been captured at Chimonzo for avicultural purposes, so the population in this area is large and no doubt of considerable antiquity. Peters may have travelled south of Inhambane to collect his birds, or he may have purchased them from natives peddling them from the south. This may explain the absence of notes on this bird in his field diary. On the other hand the forest, now found at Chimonzo, may once have been far more extensive prior to its being cut out by natives for agricultural purposes, and may have once extended further north, to Inhambane.

On the South African subspecies of the Variegated Honeyguide *Indicator variegatus* Lesson

by P. A. Clancey

Received 11th November, 1960

In the topotypical populations of *Indicator variegatus variegatus* Lesson, 1830: Knysna, southern Cape Province, South Africa (*vide* Vincent, *Check List of the Birds of South Africa*, 1952, p. 50), the wings of ♂♂ measure 108–114, ♀♀ 104–109 mm. Study of a limited amount of material of this rather elusive species kindly placed at my disposal by the Directors of the following museums: South African Museum, Cape Town (through Dr. J. M. Winterbottom), East London Museum, Transvaal Museum, Pretoria (through Mr. O. P. M. Prozesky), and the National Museum of Southern Rhodesia, Bulawayo (through Mr. M. P. Stuart Irwin), shows that birds agreeing with the topotypical populations occur north in the eastern tropical littoral of south-eastern Africa to about Inhambane, Sul do Save, southern Portuguese East Africa, and as far north as the south-eastern Sudan and south-central Abyssinia in the interior of the African continent. In Portuguese East Africa to the north of the established range of *I. v. variegatus* occur populations of rather smaller-sized birds which appear referable to the subspecies *I. v. virescens* Reichenow, 1889: Lewa, Usambara Mountains, eastern Tanganyika Territory (see Reichenow, *Journ. f. Ornith.*, vol. xvii, 1889, p. 247), as recognised by Friedmann, *Bull. U.S. Nat. Mus.*, No. 208, 1955, pp. 89–115. A male from Mt. Gorongoza and another from Macequece, in the Vumba Highlands, have wings 104.5, 105, an unsexed adult from Coguno has a wing of 101, while an adult female from Beira has a wing of 103 mm. Friedmann (p. 115) gives the wing of the male of *I. v. virescens* as 100–105, and the female 98 mm. (apparently only one measured). This author also writes (p. 91), " It is possible that the birds of eastern Mozambique may yet prove to belong to this race (*I. v. virescens*) rather than the nominate one," and this observation is here confirmed by the finding of populations with the mensural characters of the race concerned as far south as northern Sul do Save in the eastern lowlands of south-eastern Africa. *I. v. variegatus* and *I. v. virescens* should both be admitted to the South African list on the basis of the above findings.

In a series of 2 ♂♂, 4 ♀♀ from Northern Rhodesia and Nyasaland occur some extremely greyish backed examples, completely devoid of the olive lake colour to the fringes of the feathers of the mantle, rump and wings, so typical of the majority of *I. v. variegatus*. The specimens concerned are not worn, so that the significance of this development is at present obscure, but it is interesting to note that Zedlitz (*vide Journ. f. Ornith.*, vol. lxiii, 1915, p. 8) has already recorded such variants from elsewhere in Africa.

Notices

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DINNERS AND MEETINGS FOR 1961

March - B.O.U. York Conference, 18th April, 16th, May 19th September, 17th October, 21st, November, 19th December.

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If no MS. is handed to the Editor at the Meeting, a note will be inserted mentioning the contribution.

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SUBSCRIPTION

Thirty Shillings Annually. Four Shillings per copy, payable to the Hon. Treasurer, C. N. Walter, Esq., Finsbury Pavement House, 120 Moorgate, London, E.C.2.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent

Bird Room

BULLETIN

4 APR 1961
PURCHASED

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Edited by
Dr. JEFFERY HARRISON

BRITISH

Volume 81
No. 4

April
1961

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Volume 81

Number 4

Published: 29th March, 1961

- 4 APR 1961

PURCHASED

In view of the B.O.U. York Conference, no joint meeting with the Club was held in March.

More aquatic predators of birds

by CHARLES R. S. PITMAN

Received 2nd January, 1961

Sufficient additional data, received mainly in the course of correspondence, have now come to hand to justify publication. In particular, there is much information from Southern Africa about predation by otters. These notes follow the previous pattern, *ibid* 77 ([6], [7] and [8]).

PART I

MARINE

(I) MAMMALS

ANTARCTIC. Several correspondents have drawn attention to the fact that penguins are frequently taken by Leopard Seals.

AUSTRALIA: TASMANIA. John Warham ([1]: p. 607) suggests that seals are a major enemy of the Little Penguin, *Eudyptula minor* (Forster) at many breeding stations off Tasmania. But on a visit to Cat Island—a Bird Sanctuary in the Furneaux Group, in the Bass Strait, he only saw one Fur Seal, *Arctocephalus tasmanicus* Scott & Lord (=*Gypsophoca tasmanica*) and came across only one dead penguin bearing wounds consistent with the bite of a seal. Besides *A. tasmanicus*, the Australian Sea-lion, *Neophoca cinerea* (Péron) is the only other seal in Australian and New Zealand waters which is known to prey on penguins.

(II) SHARKS

EUROPE: BRITAIN. Brigadier J. A. L. Caunter, President of the Shark Angling Club of Great Britain, writes that he has "never heard of a bird being found in the stomachs of blue sharks". The sharks caught at Looe (Cornwall) are nearly all Blue Shark, *Carcharhinus glaucus* L. and during the 4 years 1957–1960 their landed total was 21,480. The majority are small, 25–60 lbs. but many are over 75 lbs., and a small proportion (about 2.4 per cent.) over 100 lbs. Quite a number are cut up for crab-pot bait. It is possible that the Blue Shark may be an occasional predator of sea-fowl, for Brig. Caunter also writes "I have seen blue sharks *apparently* stalking herring gulls on the water on warm, sunny days, but have never seen one caught or even in dire peril. Possibly, blue sharks would pick up dead gulls and other dead birds".

SOUTH AFRICA. Professor J. B. L. Smith ([2]: p. 44) refers to a 14ft. Tiger Shark, *Galeocerdo cuvier* Lesueur landed at Durban which contained amongst a medley of vertebrate and other objects, 3 sea gulls.

Ranger M. A. Steele ([22]: pp. 41–42) at St. Lucia estuary, Natal, in May 1956, saw a *Pelecanus onocrotalus* L., one of a flock of over 200 fishing and swimming at the edge of the open sea, attacked by a shark (species not identified) as it submerged its head. The bird died immediately the jugular vein having been severed and the corpse was washed ashore.

Senior Ranger I. C. Player ([22]: pp. 41–42), also in May 1956 at St. Lucia estuary, saw a *Pelecanus onocrotalus*, one of a large group fishing in the open sea, taken by a "Lazy Grey" Shark, presumably the Grey Shark *Eulamia limbata* Muller & Hinde (formerly *Carcharhinus limbatus*), which attains a length of 9ft. The others were unperturbed and continued fishing. It is possible that the preceding observation also refers to the Grey Shark which is well-known as a frequenter of estuaries along the South African coast.

ARCTIC. Dr. Kai Curry-Lindahl, Director of the Nordiska Museum, Stockholm, in a letter, states the Greenland Shark "*Somniosus microcephalus* (Schneider) is known to prey on diving birds". But he could give no details, as in the literature* available to him in which the predation of birds by this shark is mentioned there are no references to any published records about avian prey. Bigelow & Schroeder ([3]: p. 520) referring to the food of the Greenland Shark "sometimes sea birds are captured", but they too do not quote specific cases, nor do they say whether this shark eats birds extensively.

CENTRAL PACIFIC: CHRISTMAS ISLAND. Gallagher ([24]: p. 495) saw an almost fully fledged Crested Tern, *Thalasseus bergii* (Licht.) "attacked by a large sand shark (possibly *Eulamia*) and was pulled under after two attempts . . . Another youngster was found on the beach with half one wing missing, possibly through a similar accident".

(III) OTHER FISH

No further records

(IV) CRUSTACEANS

OCYPODE CRABS.

AFRICA: CAPE VERDE ISLANDS. Dr. D. A. Bannerman ([4]: p. 83) quotes from Dr. Murphy's *Marine Ornithology of the Cape Verde Islands* that the Sand Crab *Ocypoda ippeus* Olivier, now *Ocypoda cursor* (L.), on Rhombos Islet, seasonally subsists on the flesh of petrels, in particular the White-faced or Frigate Petrel *Pelagodroma marina hypoleuca* (Webb,

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*Pfaff, J. R. 1950. Hajer. *In Vort Lands Dyreliv, II.* Kobenhavn.
Nybelin, O. 1954. Hakäring, *Laemargus borealis* (Scoresby)—In Andersson: *Fiskar och fiske i Norden, I.* 2nd edition, Stockholm.
Curry-Lindahl, K. 1957. *Fiskarna i färg.* 3rd edition. Stockholm.

Berthelot and Moquin-Tanden), which it hunts in their holes at night during the breeding season. Many of these birds were found torn to pieces in the nest chambers. The crabs, which have a shell width of two inches and a total span of about one foot including the long legs, were watched picking birds' bones, or dragging out fresh victims that had been captured.

It was ''noticed that the crabs regularly introduced themselves into the burrows at evening, leaving at once and moving to another nest if their search was not rewarded. Sometimes they would spend a whole night hunting in this way, often getting a rich harvest''.

AFRICA: SEYCHELLES. *Ibid* 77 ([6]), p. 91, the depredations caused by Ocypode crabs at a breeding ground of terns in the Laccadive Archipelago are described. So it is interesting that Ridley and Lord Richard Percy ([5]: p. 43), at a seafowl breeding ground on Desnoeufs Island, Amirantes group, where *Ocypoda cordimana* Desmarest occurs ''well inland, burrowing in the guano or living under rocks, they appear to be quite harmless to the birds and their eggs''. This Ocypode and another land crab, *Geograpsus grayi* H. M. Edwards, similar in habits and habitat, they considered to be harmless scavengers.

ROBBER CRAB.

AFRICA: SEYCHELLES. According to Ridley and Percy ([5]: p. 43), the Coconut Crab or Robber Crab, *Birgus latro* L. on Cosmoledo Island of the Aldabra Group, is said by Mr. H. Savy to eat the eggs of the Sooty Tern, *Sterna fuscata* L.

The pugnacious and carnivorous Land Hermit Crabs, of which *Birgus* is by far the largest, one would expect more likely to attack live prey, rather than injured or dead creatures which are the usual prey of the smaller Ocypode Crabs.

GENERAL. CHRISTMAS ISLAND. Gallagher ([24]: pp. 492–493) records that the hermit crabs are sometimes found within the breeding colonies of ground-nesting seafowl, on which they are reputed to prey (Murphy *et al* 1954). Further, he doubts if the larger and more numerous land crab causes much damage as he has not only seen a Sooty Tern, *Sterna fuscata* L. chase one away, but saw a chick hide without injury in a hole next to a crab.

Presumably the hermit crab is a species of *Coenobita* and the land crab is probably *Geisiccoidea humei* (Wood Mason).

GENERAL. SEAFOWL WITH DAMAGED LEGS.

MADEIRA. Bannerman ([4]: p. 161) records that in 1925, on the Desertas, in the Madeiran Islands group, Meinertzhagen examined 27 examples of Bulwer's Petrel, *Bulweria bulwerii* (Jardine and Selby) eleven of which had a leg severed at the junction of the tarsus and femur or slightly above it. The local boatmen, who had noticed this before, could offer no explanation. Meinertzhagen suggested that the leg had been lost when the bird, while 'taxi-ing' along the surface of the ocean was snapped at by some large fish—a logical conclusion in the case of a small pelagic species.

BRITAIN. DEFORMITIES IN BIRDS. Dr. H. L. Rogerson (of Norwich) ([6]: p. 561) ''The loss of a leg is very common in sea birds. One-legged birds are maimed by the fish from the sea.'' At gull breeding sites in N.W. Scotland, in 1958, he observed that there was *one* one-legged bird to each 15 normal Herring Gulls, *Larus argentatus* Pontoppidan and to each 15 Common Gulls, *Larus canus* L. There appeared to be less damage among the Black-headed Gulls, *Larus ridibundus* L. and Black-backed Gulls, *Larus fuscus* and *Larus marinus*. Despite many expressed views to the contrary, he claims that the gulls are not principally maimed by gin-traps. A few years previously in the same area he had seen a young one-legged Black-backed Gull fly out to sea in fairly rough weather. As it was about to settle some 40 yards out a large fish leapt out of the water and got hold of its remaining leg. But the Gull managed to fly away though it was not possible to see whether it was then legless.

A puzzling feature of this observation is the identity, in British waters, of a fish which would attack so large a bird as a gull; but *ibid* 75 (^{8}) Glegg has recorded a Cod, *Gadus callarias* L. that had taken a Black Guillemot, *Uria grylle grylle* L. It is a different matter in the case of *Bulweria bulwerii*, which frolics and feeds in a locality much frequented by voracious packs of large predatory fishes.

FRESHWATER

(I) MAMMALS

OTTERS.

EUROPE: SWEDEN. Dr. Kai Curry-Lindahl "From Sweden there are records of *Lutra lutra* L. preying upon Sea birds but this must be very rare."

In a further communication "The predation of otters on birds is rare. We have some data from Sweden. They are not yet published. Mr. Sam Erlinge, Zoologiska institutionen, Lund, is working with an investigation on the otter. He has found by examining the droppings that this carnivore may prey on juveniles of *Anas platyrhynchos* and *Fulica atra* in summer and on adults of the same species in winter. Also, *Sturnus vulgaris* and *Delichon* or *Hirundo* have been found in the material."

I have not included references to the predation of waterfowl by otters in Britain as this is well known.

AFRICA: SUDAN. Mr. R. C. H. Sweeney (now in the Dept. of Agriculture, Nyasaland) describes predations by the Spotted-necked Otter, *Lutra maculicollis* Lichtenstein. In Nov. 1953, on the bank of the Bahr-el-Arab an otter was found with a Fulvous Tree-Duck (or Whistling Teal), *Dendrocygna bicolor* (Viellot), the neck partially eaten. In the same area a month later and again in Jan. 1955 respectively, another *D. bicolor* was found in a similar state and one with part of its breast eaten as well. Though not seen otters were believed to be responsible for both these casualties. Again, in this locality, in Dec. 1955, an otter, probably *L. maculicollis*, was seen to take a duck, *Dendrocygna* sp., one of a large number. The otter reared out of the water to catch it as the duck tried to fly, and then submerged with its prey in its jaws and was not seen again.

NORTHERN RHODESIA. W. F. H. Ansell (^{7}: p. 35) referring to the Clawless Otter, *Aonyx capensis* Schinz "Has been known to kill poultry".

SOUTHERN RHODESIA. Valuable records have been received from Mr. P. St. J. Turnbull-Kemp, the Warden i/c Fisheries, Rhodes-Inyanga Estate and National Park concerning depredations by *A. capensis*. A 'flapper' Black Duck, *Anas sparsa* Eyton taken in the Inyanga river

5,900 ft., 1956. Four fowls and (probably), two Mute Swans, *Cygnus olor* (Gmelin) and 6 domestic ducks and geese, at Inyanga, during 1956–57. One little Grebe, *Podiceps ruficollis capensis* (Salvad.) seen to be taken in the Mare dam, 6,350 ft., 1957.

Vide ([23]: p. 135) "a stock-killing otter can be exceedingly destructive, destroying birds up to the size of swans or geese. Some become "Persistent poultry raiders".

SOUTH AFRICA. A. Haagner ([8]: p. 40) referring to otters, species not mentioned, "ravished poultry runs, devouring the eggs and killing fowls and ducks".

G. C. Shortridge ([9]: p. 192) with reference to *A. capensis* "Otters destroy a considerable number of wild duck and other water fowl, even swans sometimes, these being either pounced upon among the reeds or seized by the feet in open water and held under. When opportunity offers they will sometimes raid poultry yards".

Both in South Africa and Southern Rhodesia the Mute Swan is an introduced species.

C. T. Astley Maberly ([10]: p. 159) referring to the Cape or Clawless Otter, *Aonyx capensis hindei* (Thomas) "it also catches waterfowl". The *Reports of the Department of Nature Conservation*, in the Administration of the Cape of Good Hope, indicate the extent of avian depredations by otters, mainly the Clawless Otter, *Aonyx capensis*, which is the only species in the region south of Knysna, where it meets the Spotted-necked, *Lutra maculicollis*.

The 1952 Report ([11]: p. 26) refers to the high losses of birds on a two-acre dam, from otters, as well as the raiding of water fowl nests by the partially aquatic Grey Mongoose, *Herpestes ichneumon* L. and Marsh Mongoose, *Atilax paludinosus* G. Cuvier.

In the Jonkershoek Reserve ([11]: p. 27), where special predator control measures are taken, not a single nest of waterfowl survived, and in some cases even the parent birds too were destroyed.

In the 1957 Report ([12]: p. 16), referring to the Worcester region, "the worst enemy of both wild duck and fish is the otter which, due to its shy nature, is extremely difficult to eradicate". At Plettenburg Bay ([12]: p. 18) otters caused a lot of damage killing in one night the cob of a pair of swans and a flock of ducks; and a turkey the next night.

In the 1958 Report ([13]: p. 65) it is emphasized that the Clawless Otter is undoubtedly the worst predator of waterfowl in the Jonkershoek Nature Reserve and it "appears to indulge in an orgy of killing whenever it gains access to the Reserve. On two occasions 30 and 45 birds respectively were lost". But on p. 72 it is recorded that not everywhere is this species so destructive to waterfowl.

Mr. A. C. Harrison, who until recently was Fisheries Officer in the Department of Nature Conservation, *in litt.* finds it a mystery "how the Black River Duck, *Anas sparsa* manages to survive in the otter infested reaches of our rivers". He describes how in a wired-in enclosure near such a river otters one night destroyed a flock of domestic ducks turning the place into a shambles.

MONGOOSE.

AFRICA: SOUTH AFRICA. Reference has been made already to depredations by the Grey Mongoose and the Marsh Mongoose.

The Cape Grey Mongoose ([13]: p. 72) at the Provincial Wild Life Farm, at DeHoop, is responsible for destroying many waterfowl nests.

SUDAN. Sweeney, at Lake Keilek, in March 1953, found the feathers and bones of a small wader, which was not identified, in the stomach of a Marsh Mongoose.

(*To be continued*)

Geographical variation in the Black Woodpecker

by K. H. Voous

Received 2nd December, 1960

The Black Woodpecker, *Dryocopus martius*, has a characteristically palaearctic distribution, ranging continuously from the shores of the Pacific Ocean almost to those of the Atlantic. Geographical variation in this huge area is very small. Apart from an isolated group of populations in western China, where the birds have a distinctly more glossy plumage and on this account are referred to as to a separate geographical race *khamensis*, the geographical variation consists of differences in body size, expressed in the length of the wing. Dementiev (1939) was the first to summarize details of measurements from which he concluded that a small form inhabiting the southwestern parts of the range should be separated from the main group of continuous northern populations. The populations mainly inhabiting the boreal climatic zone remain rather uniform in their measurements and are known under the name *martius* Linnaeus (1758), type-locality Sweden. According to Dementiev (1939) birds from southern, western and central Europe eastwards to western Poland, also Asia Minor, Caucasia, and northern Iran, represent a group of smaller size for which the subspecific name *pinetorum* from Brehm (1831) is available, with type-locality Black Forest, western Germany. Peters (1948) in the VIth volume of his *Check List of Birds of the World* followed Dementiev in the recognition of the race *pinetorum* and of the range assigned to it.

The present author became interested in the geographical variation of the Black Woodpecker by two different reasons: firstly, in view of the preparative work for a check list of the birds of the Netherlands undertaken by a special committee of the Netherlands Ornithological Union; secondly, to deduce from the known present distribution and geographic variation of the species a hypothesis of the post-glacial history of distribution in Europe, comparable to similar histories previously studied for the Spotted Woodpeckers, the Bullfinch, and the Nuthatches. From 1950 onwards he has been collecting measurements of specimens (reaching a number of 147) in at least 16 museums and private collections, including the museums in Amsterdam, Basel, Bergen (Norway), Bonn, Göteborg, Leiden, London, Oslo and Stavanger.

The results have been summarized in the table of wing measurements and in the accompanying maps 1 and 2, using the distribution map in the *Atlas of European Birds* Voous (1960) as a basis. Other measurements, notably those of the bill and the tail, have proved to be of no use in discovering additional trends of geographical variation.

Table of Measurements of *Dryocopus martius*

Those marked with an ★ are from Dementiev 1939.

Note: measurements taken by Dementiev and by the present author are noteworthily alike; see also map 2.

MALES

region	*variation*	*number of specimens*	*mean*
*Northern Russia	236–257	9	245.2
*Central Russia	240–255	13	246.3
*Western Russia	235–248	7	241.1
*Poland	232–243	5	238.4
Sweden	236–250	23	242.6
Norway	238–245	6	242.6
Germany	233–243	5	237.0
Switzerland	234–242	5	237.7
Vosges Mountains	232–240	4	237.1
Netherlands	231–236	4	234.0

FEMALES

region	*variation*	*number of specimens*	*mean*
*Northern Russia	238, 250	2	244
*Central Russia	233–252	17	240.8
*Western Russia	233–243	10	239.4
*Poland	228–240	3	233.6
Sweden	234–247	16	240.8
Norway	237–247	9	240.3
Germany	225–241	10	234.7
Switzerland	233–237	7	235.1
Vosges Mountains	231–242	6	235.4
Netherlands	230–237	14	233.3

The conclusions appear as follows:

1. The characters of the isolated Chinese populations are confirmed, both as regards the larger size and the deep black gloss of the plumage. These populations therefore must have been isolated for a relatively long time.

2. There is a trend of decreasing size from east to west in the continuous boreal populations over at least 10,000 km., but individual overlap is considerable.

3. The birds from central Europe are on an average of a smaller size, but again, individual overlap is considerable. In this case, however, the geographical differences, which run from Sweden to central Germany, cover a distance of no more than about 500 km.

4. Measurements of the birds from Asia Minor appear intermediate between those from the boreal region and central Europe.

As regards *nomenclature*, there is apparently no justification for the use of different trinominals for central and northern European populations, as the overlap of the theoretical frequency distribution with central European populations covers 43% of the number of Scandinavian males and 40% of Scandinavian females[1]. In the receding tide of trinominal nomenclatorial splitting this situation reflects what systematists are heading for: populations covered by one and the same subspecific name may show certain amounts of geographical variation, mostly of a gradual or a clinal type and often showing a distinct geographical trend. Thus, as many of us hope, the disciplines of the study of geographical variation and of taxonomy (*sensu stricto*) will be driven back to their own fields of competency and will no longer be allowed to cause confusion and misunderstanding in fields which are not their own.

As regards *history of post-glacial distribution:* the present isolated populations in the Iberian and Italian peninsulas and the wide distribution of Black Woodpeckers in southeastern Europe clearly indicate that populations of that species must have survived in southern Europe during the last glacial period. The small-sized central European populations therefore seem to have re-colonized the central European range from the south. The present distribution of this group has unfortunately suffered greatly from the enormous deforestation throughout western Europe and hence has become more or less disintegrated (Voous 1960). The large-sized boreal group on the other hand has come somewhere from the east, probably as a post-glacial Asiatic immigrant. Thus, the small-sized group is wholly comparable to the populations of the European type of Great Spotted Woodpecker (*Dendrocopos major*, subspecies *candidus*, *italiae*, *arduennus*, *anglicus*, and *pinetorum*, in Voous 1947), the small forms of Bullfinch (*Pyrrhula pyrrhula*, subspecies *coccinea*, in Voous 1949) and the brown-breasted Nuthatches (*Sitta europaea*, subspecies *dalmatina*, *harrisoni*, *cisalpina*, *hassica*, *caesia*, *affinis*, in Voous & Van Marle 1953). Similarly the large-sized group of Black Woodpeckers belongs to the same immigrant fauna of eastern origin of which the Siberian forms of *Dendrocopos major* (*major*), *Pyrrhula pyrrhula* (*pyrrhula*), and *Sitta europaea* (*europaea*) at present living throughout Russia and Scandinavia also form integrant parts.

Although, according to this theory the small-sized and large-sized population groups of Black Woodpecker are of different post-glacial origins, still they have to be treated on purely taxonomic grounds under one and the same subspecific name.

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[1] According to statistical calculations kindly undertaken by Prof. Dr. J. P. Van Rooyen (Free University, Amsterdam), for which the author is most thankful.

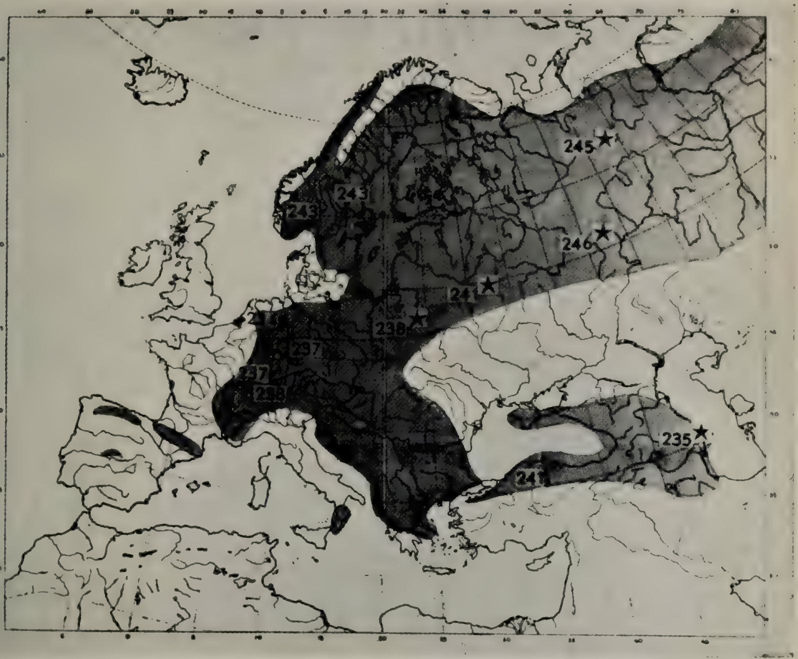
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Figure 1. Distribution of *Dryocopus martius* and the average wing lengths of males. Figures with an ★ are taken from Dementiev 1939.

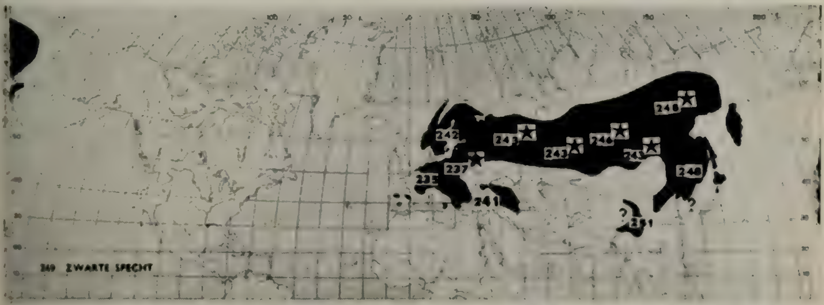
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Figure 2. Distribution of *Dryocopus martius* in Europe and the average wing lengths of males. Figures with an ★ are taken from Dementiev 1939.

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The Evolutionary Significance of Reversionary Aberrations in the Bullfinch, *Pyrrhula pyrrhula* Linnaeus

by L. HORÁVTH

Received 3rd June, 1960

Even at a cursory glance one may observe abnormalities in the plumage of the bullfinch which deserve a thorough investigation. These aberrations are of colour, pattern and the relative size of the rectrices and remiges. I must emphasise that these aberrations may be arranged in groups. This may be expressed more exactly by saying that certain colour and pattern deviations are associated with differences in the relative length of the wing and tail feathers. Considerations like these lead me to the conclusion that these aberrations or variants have an atavistic or reversionary significance and provide data of the phylogeny of the species.

The starting point in the sequence of ideas for the verification of this assumption is the indisputable fact that if aberrations occur in a species, of a type which are found as normal characters in another species of the same genus, then the aberration denotes a relationship between the two species, either by indicating that they descended from a common ancestor, or that the progenitor of the species displaying this aberration is the one which possesses it as a normal character.

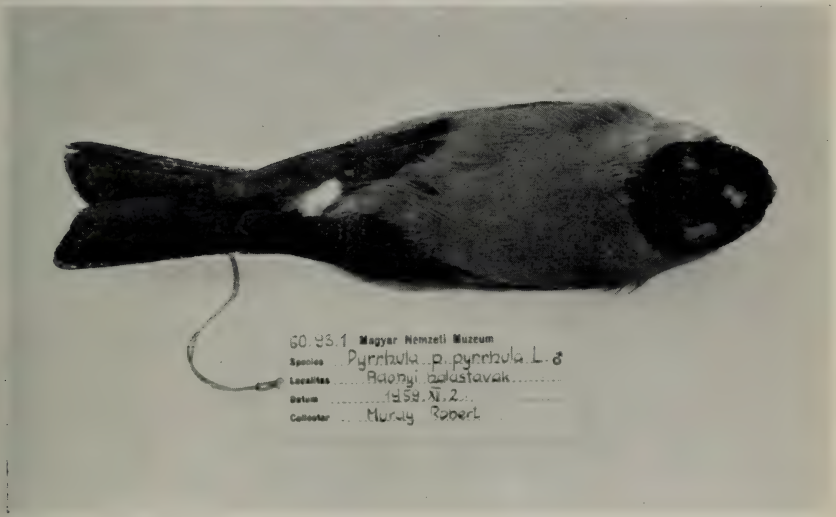
After this outline of the principle, I will give the data of the aberrant specimens. I examined a total of 66 birds; 36 males and 30 females. Aberrant specimens occurred only in the males. Of these 33 were of the nominate form, one of the race *P. p. europea* Vieillot, one of the race *P. p. rossikowi* Derjugin and Bianchi and one of the race *P. p. cineracea* Cabot. Of the 33 birds of the nominate race, 32 originated from Hungary, collected between 1957–60 and one was from the vicinity of Voronesh, U.S.S.R. The aberrant specimens were all nominate birds from Hungary as follows:—

1/59.1595.1	Csomád, near Budapest, 22.XI.1958.
2/59.1593.1	Alsógöd, near Budapest, 15.II.1959.
3/60.93.1	Adony, Transdanubia, 2.XII.1959.
4/60.151.1	Gyöngyös, Mátra Mts. 6.XII.1959.
5/60.152.1	Budapest, 26.XII.1959.
6/60.87.1	Szentendre, in Pilis Mts. 27.XII.1959.
7/60.153.1	Diósjenö, Börzsöny Mts. 19.I.1960.
8/59.1599.1	Szigetmonostor, near Bp. 8.II.1959.
9/60.91.1	Adony, Transdanubia, 12.XI.1959.
10/60.154.1	Szigetmonostor, near Bp. 10.I.1960.
11/59.1594.1	Budapest. 1.II.1959.
12/60.97.1	Budapest. 9.I.1960.
13/60.155.1	Diósjenö, Börzsöny Mts. 20.I.1960.
14/60.156.1	Diósjenö, Börzsöny Mts. 21.I.1960.

A detailed examination of these aberrant specimens demonstrates that the variations occurring in colour, pattern and the relative lengths of the remiges and rectrices can be divided into six groups.

In the first group, the tail is slightly forked, the middle rectrices are 2–3 mm. shorter than the outer ones and there are several reddish feathers in the blue-black plumage of the crown. Three specimens (1, 2 and 5) belong to this group.

The second group is represented by a specimen with a strongly forked tail, the middle rectrices are more than 5 mm. shorter than the outer ones and there are in the blue-black feathers of the crown, white feathers representing the discontinuous tracks of the white streak separating the black forehead from the blue-black crown, with also numerous pale grey and several reddish feathers intermingled with the blue-black ones of the crown (3). This one is illustrated in the accompanying plate.



60.93.1 **Magyar Nemzeti Muzeum**
Species Pyrrhula p. pyrrhula L. ♂
Localitas Adonyi halastavak
Datum 1959.XI.2.
Collector Muray Robert

Aberrant specimen No. 3 showing pale feathers in the crown and the strongly forked tail.

Of the two specimens placed in the third group of aberrations, one has a square tail as in normal birds, but there are about five orange-red feathers in the blue-black crown, while the other has a slightly forked tail, but a normally coloured crown; moreover there is a striking orange-red discolouration on the greater wing-coverts and in the grey colour on both sides and on the lower part of the back of both specimens (4, 13).

There are two further birds which show the aberrations of the first group, but in addition have some black feathers appearing in the dividing line of the white rump and the grey back (6, 7). These represent the fourth group.

In the fifth group there are four birds with black feathers above the white rump; thus this character is common with that of the specimens constituting the former group (8, 9, 10, 14).

In the sixth group of aberrant individuals the variation may be minimal from the normal characters of the bullfinch, the only deviation being that of a slightly forked tail (11.12).

As can be seen from this description of the fourteen aberrant specimens No. 3 shows the greatest departure from normal. In addition to the enumerated characteristics, there is yet another striking feature exhibited in the plumage of the specimen, namely, while in all bullfinches including normal as well as aberrant specimens, the second primary is equal in length to the sixth, the longest feathers of the wing are the third, fourth and fifth primaries, all of about equal length, in this bird the second and fifth are equal and the tip of the wing is formed by the third and fourth primaries, which are equal in length.

The results of these findings lead to the following conclusions:— First, the aberrations occur in about 43% of male bullfinches, which indicates a high degree of plasticity of characters. This plasticity is attested as variation of a reversionary character and cannot be classed as colour aberrations due to albinism, melanism, erythrism, chlorochroism, etc. or as colour deviations due to hybridisation.

The following arguments will prove this assumption. Specimen No. 3 displays the most suggestive and the most numerous aberrant peculiarities. Namely, the white feathers behind the black forehead which represent a throwback to the whitish streak in this place in *P. erythaca* Blyth, and the pale grey feathers mingling with the blue-black ones of the crown also correspond to the plumage of the crown in this same species. The strongly forked tail and the shape of the wings also suggest a reversion towards *P. erythaca*. On the other hand the single reddish feathers appearing in the crown are referable to *P. erythrocephala* Vigors.

The group of aberrations represented by specimens Nos. 1, 2, 5, revert entirely towards *P. erythrocephala*. The reversionary features here consist of the red feathers among the blue-black ones of the crown and the slightly forked tail.

Specimens No. 4 and 13 show decided inclinations towards *P. aurantiaca* Gould, partly by the reddish-orange feathers occurring on the blue-black crown (4) and partly by the orange suffusion on the greater wing-coverts and the back. One may also consider as reversionary the colouration of the underparts which are more vivid than in normal specimens and of an orange hue. Specimen No. 4 does not appear to show reversionary trends either on colour or in the shape of its tail which is square to *erythaca* or *erythrocephala*, while specimen 13 on account of its slightly forked tail has some affinity with these forms.

The reversionary peculiarities of specimens 6 and 7 representing the fourth group, relate partly to the species *erythaca*, wherein the white rump is separated by a black streak from the grey colour of the back; also, the black feathers at the upper edge of the white rump confirm this. On the other hand characteristics of *erythrocephala* are revealed in the reddish feathers among the blue-black ones of the crown and also the tail is somewhat forked. Aberrant specimens Nos. 8, 9, 10, 14 show undoubted affinities to *erythaca*. The last two and also the least aberrant birds (11 and 12) show in slight degree the forked tail of Asiatic specimens.

The presence of these characters demonstrates the fact that 12 of the

32 specimens of the nominate form *P. pyrrhula* show reversionary characters relating to the species *P. erythaca*, *erythrocephala* and *aurantiaca*. The presence of these reversionary features in this relatively high number of specimens in this explicit form provide evidence of decided and close relationship.

However, in the exposure and evaluation of the origin of these characters, we cannot rest content with the conclusion that the ancestors of *P. pyrrhula* are the three species *P. erythaca*, *erythrocephala* and *aurantiaca*, but we must go further and conclude that the last three species are also descended from each other or that, together with the species *P. pyrrhula*, they are derived from an earlier common ancestor or ancestors. This statement is supported by the fact that more than one specimen showed features common to two distinct species of the present time.

Six distinct species of bullfinch are generally accepted to-day; the present study investigating reversionary aberrations disclosed the close relationship of four of them. There remains the question of the degree of distinctness in the two remaining species. This will only be answered by further investigation, but this much is certain however, that the present studies provide some clues suggesting that these two species are also closely related to the four already mentioned. In *P. nipaleniss* Hodgson the upper half of the rump is black and the lower half white, which suggests the species *erythaca*. Although the crown is greyish-brown, the base of the feathers is blackish; the tail is forked, the innermost secondary reddish. These features are shared partly by *erythaca* and partly by *pyrrhula*. The colouration and pattern of *P. leucogenys* is also similar to that of the other species.

We must now add a few words on the red colour, the striking character of males of the bullfinch, *P. pyrrhula*. The red colour of the undersides of the male is absent in only the two southernmost species, namely *P. nipalensis* of the Malay Peninsula, and *P. leucogenys* of the Phillipine Islands. In two races of *P. pyrrhula*, namely *P. p. murina* Godmanson of the Azores and *P. p. cineracea* Cabot, south of lake Baikal, the red colour of the underparts is always absent, while it is only sometimes present in *P. p. griseiventris* Lafreynes ranging over the northern islands of Japan. There is much data attesting to the fact that the orange colour of the underparts of the male in *P. aurantiaca* is at times red. All this indicates that this character is still labile and consequently the red colour is unreliable as a specific character. However some authors regard *cineracea* as a species, but the variability of the red colour makes others hesitant in accepting this character as of specific value and therefore prefer to regard it as of racial value only.

The degree of variations is also rather wide not only as regards colour and pattern, but also in measurements and shape of the bill, which again indicates that these characters have not as yet become stabilized sufficiently to allow the drawing of sharp demarcating lines between the allopatric species of the bullfinch. In the present state of our knowledge and with reference to the results of the present reversionary studies, it seems best to designate the bullfinch at the present time as a superspecies. By this I mean that the species are rarely allopatric and are descended from a single species. In view of the fact that *P. pyrrhula* is a species which ranges over an enormous area and which displays extremely variable characters of colour and measurement, it is readily understandable that this has lead to a large number of races being described, compared with the other five species with a much smaller range. Between 1758 and 1951, 31 races of *P. pyrrhula* were described as against only 6 races of the other five species, described between 1832 and 1921.

Partly on this account and partly on the basis of the reversions, we must look for the common ancestor among the other five species or in a still earlier form, closely related to one of them. Only a thorough study of the Asiatic species, including further investigation of their reversionary trends, will bring us nearer to the discovery of the common ancestor of the species.

In further support of this I might add that several biological features for instance the voice, are very similar among all the species in question. The soundness of these ideas is also supported by the fact that the number of aberrant specimens is high; furthermore they were collected over the course of three years (1958–60) and from widely separated localities. Moreover, the dates of collecting extend over four months from November to February. It is also clear from this that none of the aberrant specimens can be considered as a moulting abnormality, since this occurs only from August to October and in spring there is only an abrasion of the plumage, added to which all are adult and not first year specimens.

As a result of this investigation we can formulate the following rules. The higher the number, extent and intensity of reversionary aberrations in a given species, so much later did it separate from the one or more species to whose features it reverts. It follows that the incidence of reversionary aberrations is indicative of the age of the species.

It also follows that a decrease in reversionary aberrations indicates a stabilisation of the specific characters. If several characters of all species constituting a genus can be observed among the reversionary aberrations of one or other species, they denote that on the one hand the genus is of a homogenous origin and on the other hand, the species exhibiting the mixed reversionary aberrations is in a flourishing state of specialisation. An excellent example of such a species is *Pyrrhula pyrrhula* Linnaeus.

I am most grateful to Dr. James Harrison for his assistance in the preparation of this paper.

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The distribution of the races of *Bradornis pallidus* (V. Muller) in Southern Africa with the description of a new race

by W. J. Lawson

Received 23rd December, 1960

As a result of a recent study of geographical variation in the South African subcontinental populations of the Pale Flycatcher *Bradornis pallidus* (von Muller) based on the series of this species in the collections of the National Museum of Southern Rhodesia, Bulawayo, and the Durban Museum, it has been ascertained that the present subspecific arrangement of the populations in the standard literature is unsatisfactory and in need of revision. For the loan of material from the interior of southern Africa I am indebted to Mr. M. P. Stuart Irwin, Zoological Assistant of the National Museum of Southern Rhodesia, and to Dr. Austin L. Rand, Chief Curator of Zoology, Chicago Natural History Museum, I am grateful for comparing and identifying specimens submitted to him.

Three races are currently accepted as occurring in southern Africa, these being *B. p. subalaris* Sharpe, 1873: Mombasa, Kenya Colony, which is asserted to range from Natal, Zululand, eastern Transvaal and Portuguese East Africa northwards in the eastern lowlands; *B. p. murinus* Finsch & Hartlaub, 1870: Caconda, Angola, with its stated range as Angola, Bechuanaland, Ovamboland and Southern Rhodesia northwards, while *B. p. aquaemontis* Stresemann, 1937: Waterberg Plateau, South-West Africa, is reputedly confined to the Waterberg Range of north-eastern South-West Africa.

B. p. subalaris is found to be a very small race confined to the eastern tropical littoral and probably does not come within the limits of subcontinental southern Africa. The wing-measurements of specimens of this race from coastal Kenya Colony in the collection of the Durban Museum are ♂♂ 82.0–84.5 (83.1) and ♀♀ 79.5–81.0 (80.0), which are considerably smaller than any of the many south-eastern African birds measured by me. The populations of Natal, Zululand, southern Swaziland, the eastern Transvaal and extreme southern Sul do Save usually incorrectly placed as *B. p. subalaris*, are now found to be inseparable from the brown-backed *B. p. murinus* of Angola, the identification being kindly confirmed by Dr. Austin L. Rand, who compared material from the area concerned with samples of the Angola populations. In the course of this study the south-eastern birds were compared in the Durban Museum with others from eastern Southern Rhodesia and a single specimen from Angola, with which they were found to agree in all subspecific characters. The range of *B. p. murinus* has now been determined as from central and northern Angola, the southern Congo, the North-Western, Western, Northern and Southern districts of Northern Rhodesia,? Nyasaland, Southern Rhodesia, except for Matabeleland, south to the eastern Transvaal, southern Swaziland, the extreme southern part of Mozambique, Zululand and Natal (rare). The wing and tail measurements of specimens of *B. p. murinus* as measured by me are 10 ♂♂ wing 89.0–98.0 (94.6), tail 69.0–80.5 (74.4), 10 ♀♀ wing 83.0–91.0 (87.2), tail 62.0–69.0 (66.8) mm. The specimens from Natal, Zululand, southern Swaziland and the eastern Transvaal average smaller in size, but are not subspecifically distinct.

B. p. aquaemontis, based on specimens from the Waterberg, South-West Africa, is a large pale race, differing from *B. p. murinus* in size and in the grey upper-parts, which are about 00S–8–2° (*vide* Villalobos, *Colour Atlas*, 1947) as opposed to a reading of 00S–6–3° in *B. p. murinus*, which is distinctly darker and browner in comparison. Chapin (*Birds of the Belgian Congo*, part iii, p. 613, 1953) suggested that *B. p. aquaemontis* may extend to Balovale on the upper Zambesi River, and this supposition is probably correct. Specimens examined from the northern Bechuanaland Protectorate and Matabeleland are now found to be referrable to this large grey race, thus extending its distribution far to the east of its previously restricted range in the Waterberg. The populations of Barotseland, Northern Rhodesia, placed as *B. p. murinus* by Benson & White (*Check List of the Birds of Northern Rhodesia*, 1957) probably belong to this race as well. The wing and tail measurements of *B. p. aquaemontis* are 11 ♂♂ wing 96.0–102.5 (98.6), tail 72.5–81.5 (75.5); 5 ♀♀ wing 88.0–90.5 (89.2),

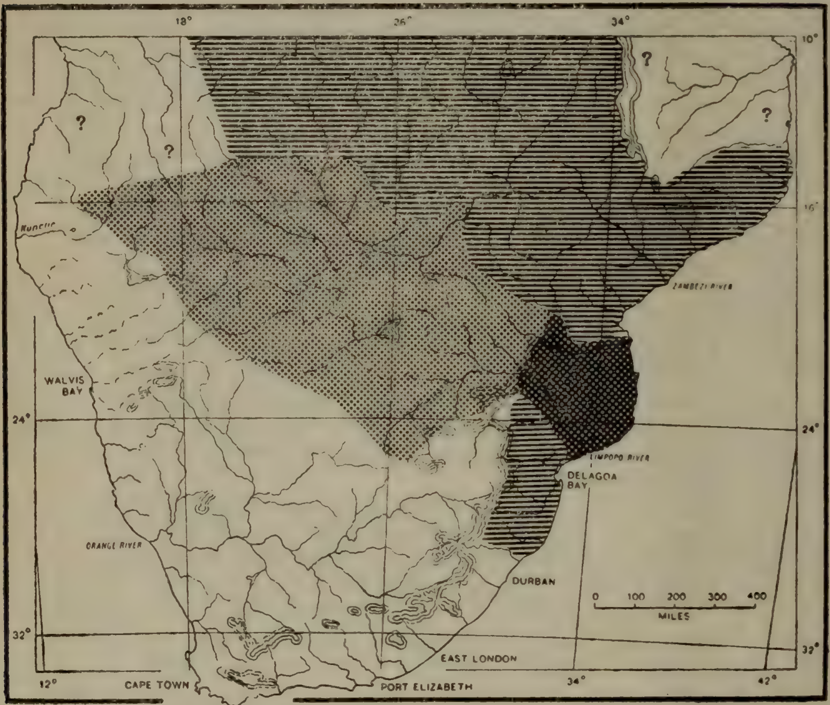
18°
26°
34°
10°
?
?
?
?
16°
ZAMBEZI RIVER
WALVIS BAY
24°
24°
LIMPOPO RIVER
DELAGOA BAY
ORANGE RIVER
DURBAN
0 100 200 300 400
MILES
32°
32°
EAST LONDON
12°
CAPE TOWN
PORT ELIZABETH
34°
42°

Figure 1. Sketch Map to show the distributions of the races of *Bradornis pallidus* in Southern Africa.

▤ *B. p. murinus* Finsch & Hartlaub
░ *B. p. aquaemontis* Stresemann
▓ *B. p. divisus* mihi

tail 66.5–70.0 (68.2). The established range of this form is from northern South-West Africa and adjacent southern Angola, eastwards through the northern Bechuanaland Protectorate, to Matabeleland, Southern Rhodesia, and probably parts of the western Transvaal and Barotseland, Northern Rhodesia.

During the course of a recent collecting trip organised by the Durban Museum to southern Portuguese East Africa (August, September, 1960) it was ascertained that in the lower reaches of the Limpopo River occurs a grey form of *Bradornis pallidus*, inseparable from *B. p. aquaemontis* in colouration, but of considerably smaller proportions. This small grey form appears to be restricted to the lower reaches of the Limpopo River Valley, specimens having been examined from Beit Bridge, Southern Rhodesia, and from Panda near Inhambane, Chimonzo in the Macia district, and Manhica, southern Mozambique. It appears as if this small-sized, grey coloured innominate race of the middle and lower Limpopo River Valley is interposed and completely divides the populations of *B. p. murinus* into two blocks, north and south of the watercourse concerned. This eastern grey form, while similar to *B. p. aquaemontis* in colouration, is considerably smaller in size, and though localised in its distribution is sufficiently distinct to deserve nomenclatural recognition, and for it I propose the name

Bradornis pallidus divisus, subsp. nov.

Type: ♂ ad. Panda, near Inhambane, Sul do Save, southern Mozambique. Collected 10th September, 1960 by the Durban Museum Expedition. In the collection of the Durban Museum.

Diagnosis: Similar to *B. p. aquaemontis* in colouration of head-top, nape and mantle, but distinctly smaller in size, thus, wings of ♂♂ 91.5–95.0 (92.7), ♀♀ 84.5–85.5 (85.0) mm. as against ♂♂ 96.0–102.5 (98.6), ♀♀ 88.0–90.5 (89.2) mm. in *B. p. aquaemontis*, and tails ♂♂ 67.5–76.0 (69.7), ♀♀ 65.0–65.5 (65.2) as against ♂♂ 72.5–81.5 (75.5), ♀♀ 66.5–70.0 (68.2) mm. in *B. p. aquaemontis*. Differs from *B. p. murinus* in having the upper-parts grey and not brown, and lacking the buffish suffusion to the ventral surface.

Material examined: B. p. divisus: Southern Rhodesia 3, southern Mozambique 10, *B. p. aquaemontis:* Bechuanaland Protectorate 1, Matabeleland, Southern Rhodesia 22, *B. p. murinus:* Angola 1, Southern Rhosedia 17, eastern Transvaal 5, southern Swaziland 7, southern Mozambique 11, northern Zululand 2.

Measurements of Type: wing 94.0, tail 76.0, culmen 18.0 mm.

Range: Lower reaches of the Limpopo River from about Beit Bridge to Sul do Save, southern Mozambique. In the littoral from about Panda, near Inhambane, north of the Limpopo River, to Chimonzo near Macia, and Manhica, south of the Limpopo River. A single specimen from Bela Vista, in the Maputo district, seems to belong to this small-sized grey race, but other specimens from the same place are referrable to the larger, brown *B. p. murinus*.

Remarks: This subspecies divides the populations of *B. p. murinus* into two blocks, one north and one south of the Limpopo River Valley, and from this fact derives its name.

BRITISH ORNIT

INCOME AND EXPENDITURE ACCOU

1959 £	EXPENDITURE	£ s. d.	£ s. d.
	"Bulletin" Vol. 80		
439	Cost of publication, distribution including Editor's Expenses	503 17 4	
118	*Less:* Sales	124 6 7	
			379 10 9
321			
42	Notices etc. for Meetings		49 13 11
60	Postages, Projectionist and Miscellaneous Expenditure		55 8 4
5	Audit Fee		5 5 0
5	Contribution "Zoological Record"		5 5 0
433			495 3 0
44	Balance, Excess of Income over Expenditure carried down		— — —
£477			£495 3 0
—	Excess of Expenditure over Income, brought down		75 18 11
79	Surplus for the year carried to General Fund		— — —
£79			£75 18 11

BALANCE SHEET

1959 £		£ s. d.	£ s. d.
1,353	GENERAL FUND:		
	As at 31st December 1959		1,353 0 4
108	BULLETIN FUND:		
	As at 31st December 1959	107 15 3	
	Received during year	8 10 3	
		116 5 6	
	Less: Transfer to Income and Expenditure Account	16 4 10	
			100 0 8
82	SUBSCRIPTIONS 1961 paid in advance		85 3 0
46	CREDITORS		62 10 10
1,589			1,600 14 10
	TRUST FUND: (The Capital of this Fund may not be used. The income from it is General Revenue.)		
1,000	F. J. F. Barrington Legacy		1,000 0 0
£2,589			£2,600 14 10

C. R. S. PITMAN, *Chairman*
C. N. WALTER, *Hon. Treasurer*

We have examined the above Balance Sheet and Income and Expen
in accordance therewith, and in our opinion correct.

FINSBURY CIRCUS HOUSE,
BLOMFIELD STREET, LONDON, E.C.2.
16th February, 1961.

OGISTS' CLUB

THE YEAR ENDED 31st DECEMBER, 1960

1959 £	INCOME	£ s. d.	£ s. d.
	SUBSCRIPTIONS:		
253	237 Members	248 17 0	
9	6 Associates	6 6 0	
97	Income Tax recovered under Deeds of Covenant 1959/60	45 14 3	
			300 17 3
359			
	ENTRANCE FEES:		
17	15 Members		15 0 0
101	INVESTMENT INCOME:		
	General Fund	54 7 2	
	Trust Fund	48 19 8	
			103 6 10
477			419 4 1
—	Balance, Excess of Expenditure over Income, carried down		75 18 11
£477			£495 3 0
44	Excess of Income over Expenditure, brought down		— — —
35	Sales of "Bulletin" for previous years, *less* expenses		59 14 1
—	Transfer from "Bulletin Fund"		16 4 10
£79			£75 18 11

31st DECEMBER, 1960

		£ s. d.	£ s. d.
	GENERAL FUND, INVESTMENTS:		
	4½% Defence Bonds, at cost	1,000 0 0	
	3% Savings Bonds 1960/70, at cost	100 0 0	
		1,100 0 0	
	Less: Reserve	20 0 0	
1,080	(Market Value £1,078)		1,080 0 0
1	PROJECTOR, LANTERN & SCREEN—Nominal Value		1 0 0
1	STOCK OF "BULLETIN"—Nominal Value ..		1 0 0
19	DEBTORS		4 9 0
488	CASH AT BANK		514 5 10
1,589			1,600 14 10
	TRUST FUND, INVESTMENTS:		
1,000	3½% War Stock £1,399 11*s*. 0*d*. .. .. .. (Market Value £829)		1,000 0 0
£2,589			£2,600 14 10

nt with the books and records of the Club and certify them to be

W. B. KEEN & Co.,
Chartered Accountants.

British Ornithologists' Club

REPORT OF THE COMMITTEE

MEETINGS

The Club held seven meetings during the year at which the total attendance was 246. In addition there were two meetings, in March and October, held jointly with the British Ornithologists' Union. The amendments to the Rules which were approved at a Special General Meeting held on 20th September 1960 have effected a greater measure of co-operation between the Club and the British Ornithologists' Union.

MEMBERSHIP

The Committee very much regret to record the death during 1960 of W. W. Naumberg and N. Williams.

There were twelve resignations and seventeen new members were elected, bringing the total membership to 250, an increase on the year of three.

One subscriber resigned but there were six new subscribers to the "Bulletin".

FINANCE

The Accounts of the Club for the year 1960, presented herewith show an Excess of Expenditure over Income of £75 18*s*. 11*d*.; this is partly set-off by the sale of old "Bulletins" which amounted to £59 14*s*. 1*d*., leaving a deficit on the year of £16 4*s*. 10*d*. This has been made good by a transfer from the "Bulletin Fund".

There were two major fluctuations during the year. The cost of the "Bulletin" has increased by £65, due to an increase in printing charges and to the inclusion of a Scientific Index; on the other hand the amount received from Deeds of Covenant is less by £51, as the previous year included three years' repayments.

The Club will need more income for the future now that entrance fees have been abolished, and the "Bulletin" is costing more. Members can help in this respect by introducing new members and also by giving Deeds of Covenant to the Club.

C. R. S. PITMAN,
Chairman.

Notice

Will all contributors please note the new instructions on the back cover as from this month.

24 APR 1961
PURCHASED

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Dr. J. G. Harrison, "Merriewood", Sevenoaks, Kent. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, Miss E. Forster, The Double House, Wiveton, Holt, Norfolk.

DINNERS AND MEETINGS FOR 1961

18th April, 16th May, 19th September, 17th October, 21st November, 19th December.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent.

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BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Edited by
DR. JEFFERY HARRISON

Volume 81
No. 5

May
1961

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

Volume 81

Number 5

Published: 1st May, 1961

Annual General Meeting

The Sixty-ninth Annual General Meeting of the British Ornithologists' Club was held at the Rembrandt Hotel, S.W.7, at 5.30 p.m. on Tuesday, 18th April, 1961. Captain C. R. S. Pitman took the Chair and there were nine Members present.

(1) The Minutes of the last Annual General Meeting held on 19th April, 1961 were passed and signed.

(2) The adoption of the Report for the year ending 31st December, 1960 was carried unanimously. Proposer, Mrs. Upton, seconded by Mrs. Boyd Watt.

(3) The adoption of the Accounts for the year ending 31st December, 1960 was carried unanimously. Proposer, Miss E. Leach, seconded by Mr. C. W. Mackworth-Praed.

(4) The re-election of Mr. C. N. Walter as Honorary Treasurer and Miss E. Forster as Honorary Secretary was carried unanimously. Proposer, Mr. C. W. Mackworth-Praed, seconded by Mrs. Boyd Watt.

(5) The election of Mr. J. J. Yealland of Editor as from the 1st January, 1962, vice Dr. J. G. Harrison whose period of office expires at the end of 1961, was carried unanimously, and was coupled with a vote of thanks to Dr. Harrison. Proposer, Mrs. Upton, seconded by Mr. C. J. O. Harrison.

(6) A vote of thanks to the Auditors, Messrs. W. B. Keen & Co. was carried unanimously. Proposer, Mr. C. N. Walter, seconded by Mr. C. W. Mackworth-Praed.

The meeting was then adjourned.

The five hundred and eighty-ninth meeting of the Club was then held.

Chairman: Captain C. R. S. Pitman

Members present, 22; Guests 6. Guest of the Club, Maxwell Knight.

Hand-rearing of Birds

After the dinner Maxwell Knight gave a short talk on some of the problems of hand-rearing birds, paying special attention to feeding, nest sanitation and the time and thought that needs to be given to "de-taming" hand-reared birds prior to releasing them.

The talk was illustrated with films and slides of hand-rearing a Great-spotted Woodpecker, a cygnet, and a cuckoo, which included some delightful and unique shots of the woodpecker drying itself on a towel after bathing.

More aquatic predators of birds

by CHARLES R. S. PITMAN

Received 2nd January, 1961

PART II

(II) FISH

(A) INDIGENOUS

(a) Large SILURIDS

(i) *Clarias*

AFRICA: UGANDA. Dr. Kai Curry-Lindahl, in Lake Edward (April, 1952), saw a dead Marsh Sandpiper, *Tringa stagnatilis* (Bechstein), which had been thrown into the water to attract a lung-fish (*Protopterus*), taken by a *Clarias* sp., probably *C. lazera* Cuv. and Val.

LAKE VICTORIA. Dr. Philip S. Corbet, when in the East African Fisheries Research Organisation at Jinja, took from the stomach of a *Clarias mossambicus* Peters, 89 cm. in length, a cormorant chick just hatching from the egg—from its size probably that of the White-necked Cormorant, *Phalacrocorax carbo lugubris* (L.), *vide* ([14]: pp. 58–59). Corbet also claims that "Large *C. mossambicus* are known to congregate beneath ambatch trees in which cormorants are nesting, and to feed on disgorged *Haplochromis* dropped by the adult birds when feeding their young"; but see, *ibid* 77 ([6]), p. 93, the views of African fishermen, and also the next note.

NORTHERN RHODESIA. Mr. V. J. Wilson, a Tsetse Control Officer, when visiting by boat a nesting colony of the African Darter, *Anhinga rufa rufa* (Lacépède et Daudin), saw several nestlings fall into the water, where large *Clarias mossambicus* could be seen swimming just below the surface. The fish swallowed the chicks immediately they struck the water. The fish were not in the least afraid and were evidently waiting to receive casualties, for if he agitated the water with his hand a fish came along at once to investigate.

SOUTH AFRICA. Miss M. Courtenay-Latimer, Director of East London Museum, tells of a shot bird which fell into the Orange river and was at once seized and swallowed by a *Clarias* sp.

(ii) *Silurus glanis* (L.), sometimes called the Sheetfish or Wels.

EUROPE. According to Dr. Kai Curry-Lindahl this silurid "is certainly able to take birds from the surface when hunting in the night, and there are published records of swallowed ducks".

(b) LUNGFISH (*Proptoterus*).

AFRICA: UGANDA. Mr. D. H. Rhodes, Senior Fisheries Officer, describes how a shot snipe which fell in a dam could not be recovered for 20 minutes, during which time nearly all its feathers and most of the flesh had been stripped off. This was believed to have been the work of a *Protopterus*.

But Dr. Curry-Lindahl found no remains of birds in any of the *Protopterus* stomachs he examined on Lake Edward, and he is of the opinion that "Objects floating or swimming on the surface do not in general release attacks from lung fishes".

(c) TIGER FISH (*Hydrocyon*).

AFRICA: SOUTH AFRICA. Lieut. Col. J. Stevenson-Hamilton ([15]: p. 129) referring to Tiger Fish "I have seen large ones rising at swallows, as the latter skimmed the surface of a deep pool".

Ranger T. B. Oatley (22: pp. 37–38), in January 1957 at the Ndumu Game Reserve, Natal, records how drinking Swallows, *Hirundo rustica* L. were frequently taken—up to 5 or 6 times in the same afternoon—by an unidentified predator which could only have been a Tiger Fish, *Hydrocyon*, but which was never seen. As a Swallow, one of many, dipped there would be a sudden loud splash, a curtain of spray and one bird less.

(d) NORTHERN PIKE, *Esox Lucius* L.

NORTH AMERICA: CANADA. There is a paper by A. D. Bajkov and A. M. Shortt on "Northern Pike as Predator on Waterfowl and Musk rat" which was sponsored by Ducks Unlimited (Canada). This, together with other records of Pike predation in Canada, is being dealt with in a separate note. This species is also the Pike of Britain and Europe where it is a well-known bird predator.

(B) INTRODUCED

(a) RAINBOW TROUT, *Salmo gairdneri* Richardson.

AFRICA: SOUTHERN RHODESIA. Turnbull-Kemp found a fledgling weaverbird, *Xanthophilus xanthops* (Hartlaub) in a rod-caught trout in the Inyangombe river, at 6,000 ft., in 1955. Fledglings had previously been found in trout stomachs by other members of the staff of the Rhodes-Inyanga Estate, who believe this is not uncommon when young birds leave too early or fall from the nest.

He also has "a record of an unidentified and injured swallow being taken by a Rainbow Trout".

(b) TROUT.

AFRICA: SOUTH AFRICA. J. B. Shephard (16) describes how a gosling (*Alopochen*) disappeared in the middle of a dam. It appeared to dive, but never came up and it was believed that a large trout had taken it.

(III) CROCODILES

(a) *Crocodylus palustris* Lesson, Marsh Crocodile or 'Mugger'.

ASIA: INDIA. In the Central Provinces, A. A. Dunbar Brander (17) "Once found eight teal duck inside a crocodile, which had evidently been all swallowed at the same time". The duck in question was presumably the Whistling Teal or Fulvous Tree-Duck, *Dendrocygna bicolor*, for a crocodile would have little opportunity of capturing so many of the much more alert little Cotton Teal, *Nettapus coromandelianus* (Gmelin).

(b) *Crocodylus porosus* Schneider, Estuarine Crocodile.

BRITISH SOLOMON ISLANDS. Mrs. Diana Bradley refers to an irruption of the Australian Pelican, *Pelecanus conspicillatus* Temminck in 1952 during a severe gale in the Solomon Islands. When she visited these islands in 1953 few had survived and it was claimed locally that many had fallen victims to crocodiles.

(c) *Crocodylus niloticus* Laurenti, Nile Crocodile.

AFRICA: UGANDA. Corbet, during May/June 1956, when examining the stomachs of crocodiles killed in Napoleon Gulf, Lake Victoria, found four containing bird remains:— 118 cm. long—feet and culmen of black bird, probably African Moorhen, *Gallinula chloropus* (L.); (ii) 120 cm.—black feathers and filo-plumes; (iii) 162 cm.—black feathers; (iv) 280 cm.—one large White-necked Cormorant, *Phalacrocorax carbo*.

KENYA. Richard Tjader (18: p. 273) found "two pink-coloured flamingos'' in the stomach of a crocodile which was shot at Lake Hannington. Mrs. Susan McKay writes ''Several times we have found flamingo feathers in the stomachs of crocodiles'' shot in Ferguson Gulf, Lake Rudolf. On Central Island in this lake a crocodile about 6 ft. long was seen to stalk a spoonbill, *Platalea* sp. standing on a rock a few feet above the water. The crocodile came behind it and with a sudden snap caught it; then it plunged back into the water with the white feathers clearly visible either side of its jaws like a huge set of whiskers. It swam with its head up for some time and then suddenly submerged complete with bird and was not seen again.

Colonel R. Meinertzhagen ([19]: p. 475) records an interesting case of a crocodile preying on the Black-faced Sandgrouse, *Pterocles decoratus* (Cabanis).

TANGANYIKA. The late Capt. C. H. B. Grant told me of an astonishing experience in 1930 on Lake Tanganyika when he noticed that a Knob-nosed Goose, *Sarkidiornis melanotos* (Pennant) flying close to the surface was directly approaching a basking crocodile. The crocodile opened its mouth and into it went the bird, the crocodile immediately dived and was not seen again. Capt. Grant remarked that the blow on the crocodile's throat must have been tremendous.

NYASALAND. In Sept. 1957, in the Ruo river, Sweeney shot a four-foot crocodile which contained the remains of what was believed to be a Red-billed Duck, *Anas erythrorhyncha* Gmelin.

NORTHERN RHODESIA. According to Mr. C. W. Benson, the ''waterhen'' *ibid* 77 ([8]), p. 122 was identified by him as Allen's Gallinule, *Porphyrio alleni* (Thomson). Benson has also provided details of avian remains in eleven other crocodiles out of the large number examined by Dr. Hugh Cott:— (i) goose remains; (ii) fragments of *Streptopelia* or *Turtur* feathers, from the Luangwa area; (iii) also from the Luangwa, feathers of possibly an Estrildine finch; (iv) from the same area, *Streptopelia* feathers, probably the Cape Turtle Dove, *S. capicola* (Sundevall); (v) feathers of the Darter, *Anhinga rufa* in two specimens from the Luangwa Valley; (vi) remains of a Purple Gallinule, *Porphyrio alba* (White) from Kafue Flats, near Mazabuka; (vii) feathers of *Anhinga rufa*, from two Barotseland specimens; (viii) mangled remains of probably *Phalacrocorax* sp. from Kafue Flats, near Mazabuka; and (ix) feathers of the Long-tailed Cormorant, *Phalacrocorax africanus* (Gmelin), from Kafue Flats.

Mr. J. M. C. Uys, on 2nd November 1960 in the Busanga Flats region (approx. 14° 10′ S. : 25° 46′ E.), saw a small crocodile of 0.73 metres with an *Actophilornis africanus* (Gmelin) in its mouth. As he approached it dropped the bird and submerged. But it quickly resurfaced, grabbed its prey and disappeared.

SOUTHERN RHODESIA. Observations made by Mr. Gerald Davison and his father in the Wankie National Park:— (i) 7ft. crocodile shot in Sept. 1957 in the Chowe river contained 26 Red-billed Quelea, *Quelea quelea* (L.); (ii) 4½ ft. crocodile was seen to catch a Blacksmith Plover, *Hoplopterus armatus* (Burchell) at Nyamandhlovu Pan; and (iii) on Dom Pan, 8½ ft. crocodile was seen to take a pelican, *Pelecanus* sp.

SOUTH AFRICA: ZULULAND. About 1904–05, Capt. C. H. B. Grant was after flighting ducks by the Umfolosi river. He shot thirteen, all falling into a small pond, and as each bird struck the water and turned over head down it was seized by a crocodile and disappeared.

(IV) MONITOR LIZARD (*Varanus niloticus*)

AFRICA: SUDAN. In July 1953, in the Nuba Mountains, Kordofan, Sweeney saw a Nile monitor devouring a small wader.

UGANDA. In March 1956, Corbet found bird remains in the stomach of a specimen killed in a garden at Jinja (Lake Victoria) ([14]: p. 59).

KENYA. Corbet, in April 1956, also found bird remains in a specimen which was floating dead in Lake Victoria at the mouth of the Nzoia river ([14]: p. 59).

TANGANYIKA. In 1950, on the Mkulumuzi river near Tanga, Sweeney saw a monitor eating a "largish" bird, which was not identified.

SOUTHERN RHODESIA. In 1953, at the Robert McIlwaine National Park (4,495 ft.), Turnbull-Kemp found two domestic fowl eggs in the stomach of a *V. niloticus*; and he also has a record of one of these monitors seizing and carrying off a Dabchick, *Podiceps ruficollis* (Pallas).

Gerald Davison saw one of these monitors dash out of a hole in a breeding colony of the White-fronted Bee-eater, *Melittophagus bullockoides* (Smith) in a river bank and plunge into the water. It was immediately mobbed furiously by the bee-eaters, who evidently regarded it as an enemy, though it was not possible to confirm that it had been raiding the nests. *Ibid* 77 ([8]), pp. 123–24, see reaction of Pied Kingfishers.

(*to be concluded*)

A melanistic Chiffchaff *(Phylloscopus collybita)* in Dorset

by J. S. Ash

Received 19th December, 1960

On 17th April, 1960, several observers staying at the Bird Observatory at Portland Bill, Dorset, watched a small very dark warbler which they were unable to identify. I found the bird in the afternoon and watched it at close range in the field, where it could be compared with several typical Chiffchaffs (*Phylloscopus collybita*). The following field description was later confirmed in the hand after the bird had been caught in a mist net:—similar in size to Chiffchaff, the general colour being smoky (greyish) brown, the underparts paler; top of crown dark greyish brown (darker than mantle); cheeks and ear coverts much mottled with darker colouration, and much the same colour as the greyish brown mantle; rump, olive green, showing up distinctly in flight; a shiny grey area on each closed wing was formed by the pale edges of remiges; a yellow patch at carpal joint; whole of underparts dark greyish white except for tinge of yellow on under tail coverts and a much paler throat (in the hand, the breast, flanks and belly were flecked with a few indistinct streaks of yellow); the faintest trace of a paler supercilium reaching from half-way between the base of the mandible and eye to just above the eye, and no prominent dark line through the eye; a dark brown bill with a pale streak along the junction of the mandibles; legs very dark, but not shiny; and a forked tail which was seen in the hand to be due to very abraded central rectrices.

The following measurements were taken:— wing: 59 mm.; weight: 9.00 gms. (1800 G.M.T.). Primaries: 4th longest; 3rd and 5th equal and 0.5 mm. shorter; 6th and 7th, 1.5 mm. shorter; thus the 2nd fell between 6th and 7th.

The following dark-coloured species of *Phylloscopi* were ruled out for the reasons given:—*fuligiventer* (1st primary too short and 2nd too long, and moreover has more yellow on supercilium and underparts); *fuscatus* (2nd primary too long, etc.); *neglectus* (the wing formula is wrong and the bird too large). It was decided at the time, and again after more careful study of the notes later, that in spite of some minor inconsistencies of wing formula, the bird must be an aberrant Chiffchaff with marked deposition of melanin in its plumage pigmentation. Mr. Kenneth Williamson, to whom I sent the original notes, agrees with this identification, and has suggested it was a female, remotely *collybita*, much more probably *abietinus*.

The African Jacana, *Actophilornis africanus* (Gmelin)

by C. David Simpson

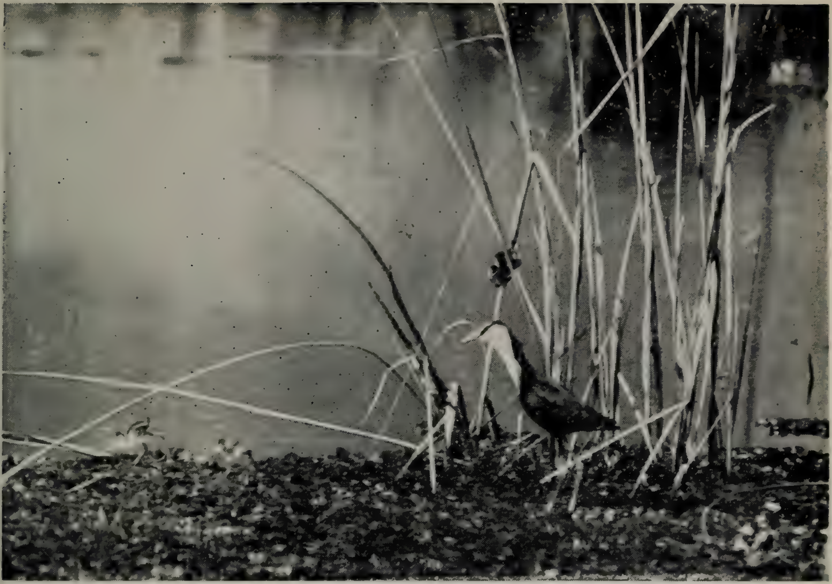
Received 23rd December, 1960

The following notes supplement those by Pitman (*Bull. Brit. Orn. Cl.* 80(6), 1960: 103–105). In a small bay on the Kariba Lake, 27th September 1960, two adult African Jacanas (*Actophilornis africanus*) were feeding on the exotic weed *Salvinia auriculata* which already covers so much of the lake. Hoping to get some photographs, I waded into the weed and hid behind a bush to wait for the birds to come within range of my camera.

One of the pair soon flew off, but the second remained, when I saw that it had four tiny chicks. I took some photographs and was sitting quite still when I heard a clicking whistle behind me. I turned round and found that the bird which had flown off was within ten feet of me. It was apparently quite unafraid but extremely curious. It made a half circle around me in a series of movements, standing perfectly still while watching me, then stalking a few yards before stopping to look again. I did not disturb it and it slowly fed along towards its mate.

I managed to circle around the bay unseen by the birds and stalked up to them once again behind a small bush. The chicks, along with what was presumably the mother, were on a small peninsula of salvinia, and as the family would have to pass within ten feet of me to get out onto the main mass of salvinia, I settled down to wait for some more photographs.

At this stage I must have moved, as the mother saw me and flew off in alarm. The chicks immediately crouched down, snuggling into the hollows in the salvinia, then crept extremely slowly towards a small tuft of grass emergent from the salvinia. The mother had in the meantime flown about thirty-five yards, landed on the salvinia and begun an interesting distraction-behaviour. She jumped up and fluttered through the air for a few feet, then 'collapsed' on the surface of the salvinia, uttering a quavering shrill piping note. She then lay for about a minute on her breast, the wings stretched horizontally, fluttering and vibrating them from time to time. As I kept quite still, she got up, ran towards me, taking a short flapping run and then collapsed again, repeating the previous behaviour-pattern.



A. Jacana mother with chicks (note erected feathers on her nape)

B. Jacana chick hiding in salvinia

This manoeuvre was repeated twice more, the bird coming closer on each occasion. On the last occasion, however, she staggered along, weaving on her feet with one wing trailing (similar movement to a rooster displaying to a hen). She then collapsed again and lay weakly flapping her horizontally stretched wings. She next rolled over, half on her side, held the other wing up in the air at an angle and at the same time pushed herself along at an angle.

The entire display lasted about five minutes on each occasion, then the bird would stand up perfectly normally, peck at a few bits of weed and launch into the behaviour-pattern once again, the shrill piping being uttered at short intervals.

The bird calmed down after about thirty minutes, got up from the end point of the display and began making her way towards the grass tuft where the chicks were sheltering. She did not go there directly, but approached in a series of zig-zag movements. The call had changed to a series of short chatters, completely different to the piping during distraction-activity. At this new call the chicks got up and looked around, but did not leave the cover of the grass clump.

At this juncture I must have moved, as the mother suddenly flew off and the chicks crouched down becoming motionless. She did not indulge in any more distraction-activity but worked her way cautiously back to the chicks. As she got to the clump, they came out and I managed a family group photograph (see A). She then led them off slowly over the salvinia.

I might point out here that what was presumably the male took no part in either the distraction-behaviour or in leading the young, but merely walked about feeding in the vicinity of the female.

I waited until the birds were out of sight behind some bushes before I went back to the shore. I then stalked the female and young. The chicks immediately hid under a small bush, and the female began the distraction-behaviour again. As the water was only two or three inches deep, I followed her and found that she would let me get extremely close before she moved away, wing trailing with a marked stagger. All the distraction pattern mentioned before was repeated, also including short, jerky flights of two or three yards.

I next went over to the bush under which the chicks were hiding and watched them for a short period. They lay perfectly still, crouched flat on the salvinia, but with their large legs held up at an angle of 45° from the horizontal. The growth was too thick for them to dive or hide under the weed, as mentioned in Pitman's note. I moved the surrounding leaves and twigs away, letting the sunlight play through directly onto them. They did not move, even when prodded with a twig.

I next caught a chick and examined it. Its body-size was that of a small domestic fowl's egg, the legs about $2\frac{1}{2}$ inches long from junction with body to base of tarsus and the feet with claws about 1 inch in length. The legs were a dark grey grading into browny-pink towards the feet. The background colour of the down was an off white with chestnut stripes down the back, the head chestnut with white sides. The beak was pale pinky grey. During the examination the chick made no move or sound, but on being picked up initially and on release, it struggled and gave a few cheeps. I then left the bush and watched the mother. She came back crouching down with her wings spread. The chicks went underneath her. She got up and stalked off in a crouched position and I distinctly saw a leg of one of the chicks sticking out from under one wing.

She went about seventy yards but soon deposited the chicks by simply opening her wings. The whole family then began to feed again on the salvinia.

An observation communicated to me by C.C. Tait seems to indicate the advantage of the dorsal stripes in chicks. In Natal, Tait observed three chicks all behaving in the same way, grasping longitudinally a broad-bladed sedge-leaf, with only the nostrils and bill above the water-level, and the body pressed into the V of the blade. The dorsal stripes were thus in line with the ribbing of the blade. The tarsi and feet were bent forwards clasping the blade, the feet reaching to the sides of the head.

I am indebted to my colleague C. W. Benson for his assistance in the preparation of this note, and to L. A. Titchener, of the Northern Rhodesia Information Department, for assistance in the preparation of the photographs. Also R. I. G. Attwell, of my department, to whom a copy of this note in draft has been shown, informs me that he has made generally similar observations at Lundazi, Northern Rhodesia, in March 1955.

Jacanas and other birds perching on hippo

by C. W. Benson

(*Received 23rd December, 1960*)

Simpson's note immediately above has prompted me to bring together various records previously unpublished, by members of my department, of birds perching on the Hippopotamus (*Hippopotamus amphibius*), especially as North (*Ibis*, 1944: 171–176) makes no definite mention of it being used for perching by any species of bird.

On 29th August 1960, on the Lufupa River, Kafue National Park, W. F. H. Ansell saw two African Jacanas (*Actophilornis africanus*) standing on the heads and backs of partially submerged hippo for several minutes. On 27th September 1960, on the Lochinvar Ranch stretch of the Kafue River, J. J. Soulsby saw one perched for nearly one minute on the head of a hippo showing just above the surface of the water. J. M. C. Uys has a record of a Goliath Heron (*Ardea goliath*) perched for about one minute on the back of a hippo standing in shallow water in the Kafue River, in the Kafue National Park on 23rd September 1960. He has a similar observation for an African Pied Wagtail (*Motacilla aguimp*), 16th August 1960. In July 1954 R. I. G. Attwell, in the Nsefu Game Reserve, Luangwa Valley, observed three cattle-egrets (*Ardeola ibis*) perched on the back of a single hippo, remaining thereon as it waded concealed through a channel in a pan for at least fifty yards.

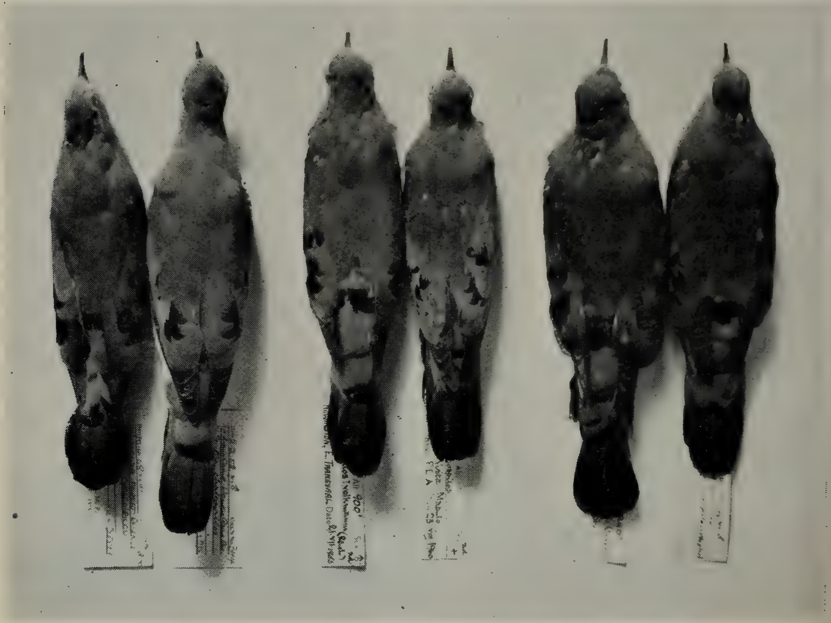
B. L. Mitchell, in August 1957, on a rocky stretch of the Kafue River near Meshiteshi, watched two White-collared Pratincoles (*Glareola nuchalis*) which remained on the head of a hippo for several minutes, the animal being otherwise completely submerged. Also, one day in May 1957, between 4.30 and 5.15 p.m., on the Zambesi some forty miles above the Victoria Falls, he watched two Reed-Cormorants (*Phalacrocorax africanus*) accompanying a school of six hippo, fishing in their vicinity. When not fishing, the cormorants would climb onto a hippo's neck from behind and rest on its head. Fishing followed by resting was observed six times.

In the Luangwa Valley, several observors have recorded both species of oxpecker (*Buphagus*) on hippo. No further details will be given here, as the associations of these two species as a whole are under current study by Attwell. But in the case of the other birds mentioned it would appear that hippo are used for perching in the same way as are rocks or other stationery objects in water.

J. M. Feely, who has recently joined my department, informs me that at Lake St. Lucia, Zululand he has frequently seen the Common Sandpiper (*Tringa hypoleucos*) perched on hippos, and on one occasion he even saw one taking and eating leeches (*Hirudo sp.*) off a hippo.

P.S. A couple of further records may also be mentioned. On 23rd March 1958, at mid-day, on the Luangwa at about 12°40′S., Attwell saw one Common Sandpiper and one Cattle Egret perched on the backs of a school of hippo lying in shallow water off a sandbank in the middle of the river. On 2nd July 1959, by the Luangwa at about 13°S., Senior Game Scout H. William saw three Black Crakes (*Limnocorax flavirostra*) running about on the back of a hippo which was out of the river, warming itself in the sun at 8.15 a.m.

See Article opposite page



The three races of the Emerald-spotted Wood Dove in Southern Africa. From left to right: *T. c. volkmanni*, *T. c. zambesiensis* and *T. c. chalcospilos*.

The South African races of the Emerald-spotted Wood Dove *Turtur chalcospilos* (Wagler)

by W. J. Lawson

Received 23rd December, 1960

Recent authoritative works on South African ornithology, *viz.*, Peters (1937), Vincent (1952), McLachlan and Liversidge (1957), recognise two races of *Turtur chalcospilos* (Wagler), these being *Turtur chalcospilos chalcospilos* (Wagler) 1827: Eastern Cape Province, which is stated to range from the eastern Cape Province, north through Natal, Zululand, Swaziland and the eastern Transvaal to Abyssinia, and *Turtur chalcospilos volkmanni* (Reichenow) 1902: Damaraland, which has its range usually restricted to South-West Africa, east to Lake Ngami. From a cursory examination of material in the Durban Museum it became evident that the usually accepted distributions of the races were not entirely satisfactory, and that three reasonably defined forms of *Turtur chalcospilos* could be admitted as occurring in sub-continental southern Africa. These new findings in the main confirm the earlier observations made on the South African populations by Clancey (1952).

The series in the Durban Museum has been augmented by the loan of additional material from other museums, for the loan of which I am indebted to the Directors of the following; Chicago Natural History Museum (through Mr. Melvin A. Traylor), National Museum of Southern Rhodesia (through Mr. M. P. Stuart Irwin), Transvaal Museum (through Mr. O. P. M. Prozesky), Natal Museum and the East London Museum. I am also indebted to Herr G. Mauersberger, writing on behalf of Professor Dr. E. Stresemann of the Zoological Museum, Berlin, for kindly supplying information on the *Types* housed in that Institute. I am also indebted to Mr. P. A. Clancey, Director of the Durban Museum, for much valuable assistance in the preparation of this paper. I have been fortunate in having no less than 165 specimens on which to base my conclusions.

T. c. chalcospilos is found to be a dark race inhabiting the eastern Cape Province, Natal and Zululand, while from southern Angola, Damaraland and northern Great Namaqualand, eastwards through the Bechuanaland Protectorate to the drier western and southern districts of Southern Rhodesia and the western Transvaal, occur markedly paler populations, which constitute the race *T. c. volkmanni.* This race is considerably paler than nominate *T. chalcospilos* of the south-east, being a race of the arid interior and west. In northern Zululand, Swaziland and eastern lowveld of the Transvaal, Mozambique and Southern Rhodesia occur populations which are intermediate in colour between the dark nominate race of the south-east and the pale *T. c. volkmanni*, but sufficiently distinct from either as to warrant independent nomenclatural recognition. To this form the name *T. c. zambesiensis* (Roberts) 1922: Zimbiti, Beira District, Mozambique, is considered applicable, the *Type* of which has been studied. This little dove has been liberally provided with names by workers, but none of those proposed, by Reichenow (*erlangeri*, 1902), Oberholser (*acanthina*, 1905), and Mearns (*intensa*, 1915) appear to be applicable to the populations I propose to call *T. c. zambesiensis*. *T. c. erlangeri*, a name given to the northern Angola population, represents very small-sized birds. Reichenow (1905) gives the wing length of this race as 100–105 mm., and the accuracy of this is confirmed by two virtual topotypes examined by me, both from Nogui, northern Angola, wings ♂ 103.5, ♀ 103.5 mm. A single similarly small-sized bird from Kilifi, coastal Kenya Colony (wing 106 mm.), on the eastern side of the continent, suggests that this small-sized race of *T. chalcospilos* extends right across central Africa in the wooded savannas lying to the south and east of the Lower Guinea Forest, and *T. c. acanthina*, a name given to the Mt. Kilimanjaro population, is almost certainly a synonym. A single specimen from the Luwipa River, Tanganyika Territory, resembles *T. c. zambesiensis* in size and general colouration, but is warmer and more buffy brown over the mantle and wings, and may yet be shown to represent an undescribed race of this small dove from the southern highlands of Tanganyika Territory. It is quite clear that the present arrangement of the populations of *T. chalcospilos* lying to the northward of 10° S. lat., in Africa is eminently unsatisfactory, but in the absence of adequate series I cannot undertake a complete racial revision of the species. Within the limits of sub-continental South Africa the characters and ranges of the three acceptable races are now reasonably well-known, and these are as follows:

(a) *Turtur chalcospilos chalcospilos* (Wagler)

Columba Chalcospilos Wagler, *Syst. Av.*, 1827, Columba, sp. 83: South Africa = Eastern Cape Province.

Synonym: *Chalcopelia chalcospilos caffra* Reichenow, *Journ. f. Orn.*, 50, 1902, p. 134: Kaffernland, *i.e.*, Eastern Cape Province.

The darkest race. Top of head Deep Neutral Gray (Ridgway (1912) pl. LIII), nape and mantle Brownish Olive (pl. XXX). On under-parts, breast Cinnamon-Drab (pl. XLVI) or slightly more violaceous.

Measurements: 7 ♂♂ wings 110.5–116.0 (112.9), culmens 17.5–19.5 (18.8), tails 81.5–89.0 (85.2), 6 ♀♀ 108.0–111.5 (109.8), 17.0–18.5 (17.6), 75.0–88.0 (81.5).

Material: 29 (Eastern Cape Province, 20; Natal, 7; Eastern Transvaal, 2).

Type: Not traced.

Range: Eastern southern and eastern Cape Province to Natal and Zululand, north of which it intergrades with the next race.

Remarks: The two specimens from the eastern Transvaal (Lydsdorp) are probably wintering birds from further south. The *Type* of *T. c. caffra* is not in the Zoological Museum, Berlin G. Mauersberger (*in litt.*), and is presumed to have been lost.

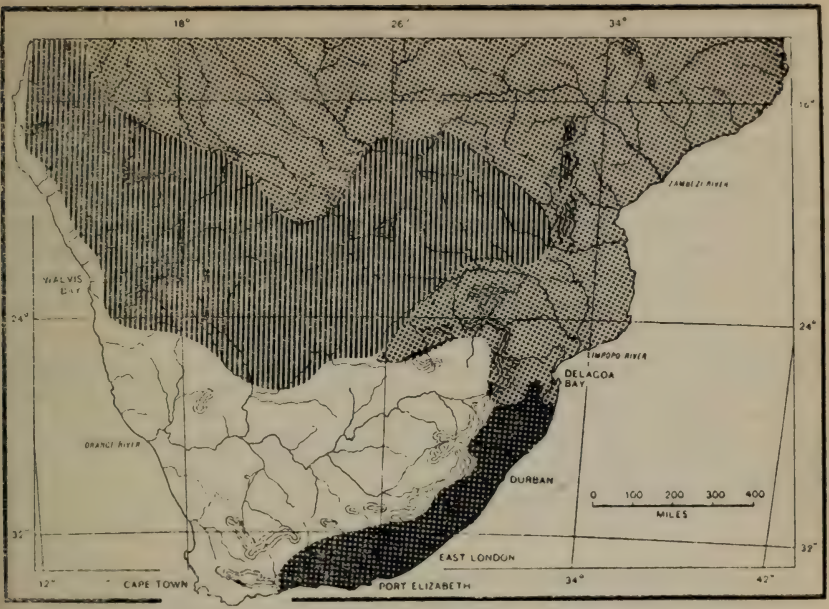
(b) *Turtur chalcospilos zambesiensis* Roberts

Turtur chalcospilos zambesiensis Roberts, *Ann. Transv. Mus.*, 8, 1922, p. 197: Zimbiti, Beira district, Mozambique.

Head-top rather lighter coronally than Deep Neutral Gray (pl. LIII), nape and mantle paler than in the nominate race, being Buffy-Brown (pl. XL) or slightly greyer, under-parts lighter, about Light Cinnamon-Drab (pl. XLVI).

Measurements: 10 ♂♂ wings 110.5–114.5 (112.4), culmens 17.0–18.5 (17.6), tails 77.5–88.0 (83.0), 10 ♀♀ 106.0–113.5 (109.0), 16.5–18.0 (17.3), 74.0–84.5 (79.2).

Material: 111 (Eastern Transvaal, 33; Swaziland, 6; Zululand, 10;


18°
26°
34°
16°
ZAMBEZI RIVER
WALVIS BAY
24°
24°
LIMPOPO RIVER
DELAGOA BAY
ORANGE RIVER
DURBAN
0 100 200 300 400
MILES
32°
32°
EAST LONDON
12°
CAPE TOWN
PORT ELIZABETH
34°
42°

Sketch-map showing the approximate ranges of the three races of the Emerald-spotted Wood Dove Turtur chalcospilos (Wagler) in Southern Africa.

▩ Turtur chalcospilos chalcospilos (Wagler)

░ Turtur chalcospilos zambesiensis Roberts

▥ Turtur chalcospilos volkmanni (Reichenow)

Mozambique, 21 Southern Rhodesia, 22; Caprivi, 1; Northern Bechuanaland Protectorate, 7; Nyasaland, 11).

Type: In the Transvaal Museum, Pretoria.

Range: Northern Zululand (unstable), Swaziland (unstable), Eastern Transvaal, Mozambique, most of the Southern Rhodesian 'plateau', Northern Bechuanaland Protectorate (in Ngamiland) and adjacent northeastern South-West Africa (Caprivi), Northern Rhodesia (*T. c. volkmanni* probable in southern Barotseland), and Nyasaland. Perhaps ranging to parts of western Angola in the west, and southern Tanganyika Territory in the east, but available material is inadequate for the determining of the northern range limits.

(c) *Turtur chalcospilos volkmanni* (Reichenow)

Chalcopelia chalcospilos volkmanni Reichenow, *Journ. f. Orn.*, 1902, p. 134: Damaraland.

The palest race. Compared with *T. c. zambesiensis* markedly paler, being noticeably whiter over the face; crown of head Gull Gray (pl. LIII), upper-parts Drab (pl. XLVI) and breast Ecru-Drab (pl. XLVI).

Measurements: 11 ♂♂ wings 110.5–117.0 (113.2), culmens 16.5–19.0 (17.6), tails 77.5–84.0 (81.5), 3 ♀♀ 107.0–109.0 (108.3), 16.0–18.0 (17.0), 75.5–83.5 (79.2).

Material: 15 (South-West Africa, 1; southern Angola, 1; Bechuanaland Protectorate, 1; Southern Rhodesia, 12).

Type: In the Zoological Museum, Berlin.

Range: The desertic regions of south-west Africa, ranging from southern and south-western Angola and the northern half of South-West Africa, eastwards through the Bechuanaland Protectorate to the western Transvaal and most of Matabeleland, and perhaps to Barotseland and adjacent parts of south-western Southern Rhodesia. Intergrades to the west of its stated range with the previous race.

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Notes on Eremomela icteropygialis *(Lafresnaye)*

by C. M. N. White

Received 14th December, 1960

This widely distributed African warbler presents a number of taxonomic uncertainties which are discussed here.

(a) *The type locality and range of the nominate form.*

Macdonald (1957) has drawn attention to the uncertainty which surrounds this point. The type locality was given as Orange river, but the label of the type originally read "des Elephants"; this locality was crossed out and "d'Orange" substituted. Lafresnaye actually said that the type was "said to have come from the Orange river", implying some doubt. A British Museum specimen matched with the type is a very pale bird from Otjimbingwe. Macdonald concludes that the name should be applied to the South West African form.

Clancey (1959) disagrees with this and recognises the nominate form as ranging from the Asbestos Mountains to the Orange river and southern South West Africa with *perimacha* as a synonym. In a letter to me dated 3rd October 1960 he argues that the type locality should not be changed, and that the type is very old, probably faded, and no longer useful for comparison. He considers that there are two forms in South West Africa, of which the more northern and paler should be called *sharpei*.

Type localities, once declared should not be amended without very good reason, but in this case there is very real doubt as to the provenance of the type of *icteropygialis* in view of the amended locality on the label, and Lafresnaye's own words "said to have come from the Orange river". Moreover the matched B.M. specimen is an old Andersons bird and therefore there is no question of comparing a fresh bird with an old foxed type.

I consider that Macdonald's arguments are therefore convincing and that *icteropygialis* refers to the paler South West African form. The series in the British Museum does not support the existance of two forms in South West Africa.

(b) *The Bechuanaland form.*

Clancey considers that Bechuanaland birds should be referred to the pale form which he calls *sharpei* and which I regard as *icteropygialis*. But British Museum material and a series of 19 others loaned by the National Museum. Bulawayo are clearer yellow on the lower belly and a little darker in general, and must be referred to the form *E. i. perimacha* Oberholser.

(c) *The Barotseland form.*

Mr. C. W. Benson asked me to investigate the correct name for this form since he had found difficulty in naming it. It is a distinct and unnamed form for which I propose

Eremomela icteropygialis viriditincta subsp. nov.

Description: nearest to *polioxantha* Sharpe, but the yellow of the underside more restricted (though less so than in *perimacha*), and less clear yellow, being somewhat tinged with green; breast and upperside more brownish grey than in *polioxantha*, but upperside decidedly greyer than in *perimacha*.

Type: adult female collected 15 miles west of Victoria Falls on 27th July, 1957 and in National Museum, Bulawayo. N.M. number 31, 270.

Range: from the Caprivi Strip and west of Victoria Falls to Barotseland from Sesheke north to Mongu and Mankoya.

(d) *The range of E. i. polioxantha.*

This form with grey upperside and yellow of abdomen reaching up to the lower breast has a very wide range from the eastern Transvaal and Zululand northwards. It extends west into Bechuanaland to Makarikari and Panda Matenga. Grant and Praed (1947) separated a single specimen from Liwale in south Tanganyika as *E. i. belli.* The supposed long wing of 68 mm. is a slip for the type has a wing of 58 mm., and the more extensive yellow on the lower breast is suggestive of immaturity. *Polioxantha* occurs at Isoka on the Tanganyika border, at Iringa and Morogoro in Tanganyika and in Nyasaland and Portuguese East Africa, and there seems to be no good reason for recognising *belli* as a distinct form. However the birds commonly united as *polioxantha* are not wholly uniform for 15 specimens from the northern areas of Northern Rhodesia average a more dusky grey above than Southern Rhodesian birds and also average rather deeper yellow below. In these respects they tend to bridge the small differences between *polioxantha* and *abdominalis* Reichenow. It is thus just possible that *belli* might be used for an intermediate form. However I find the differences between *polioxantha* and *abdominalis* rather poorly defined, and cannot see any reason for recognising an intermediate between them.

(e) *The status of E. i. abdominalis Reichenow.*

The correct allocation of this name is surrounded by some doubt. The form was described from Tabora but I have been unable to trace other material from anywhere near the type locality. I have examined a series in the Coryndon Museum from Isiolo, Lokitaung, Simba, Ukamba, Athi river, Chyulu hills and Magadi in Kenya. Compared with *polioxantha* they seem a little darker and more brownish on the sides of the breast and none shows any white stripe over the eye. Dr. A. L. Rand has kindly sent me details of another similar series in the Chicago Natural History Museum from Maungu, Camp ya Bibi, Meru, Archer's Post, Mt. Lucania and Magadi which also lack any white over the eye. The British Museum has two more from Kitumbeine and Longido, also without eye stripes. Some *polioxantha* also show no white over the eye or a mere trace, not always symmetrical. The supposed smaller bill of *abdominalis* is a rather poor average character in long series, so that the difference between the latter and *polioxantha* rests upon the eye stripe's presence or absence.

(f) *The status of E. salvadorii Reichenow.*

Mrs. Hall (1960) has drawn attention to the possible overlap of green backed *salvadorii* and grey backed *polioxantha* in central Angola, and suggests that the former is a distinct species. On the other hand material collected by Benson in N.W. Northern Rhodesia on the Lungwevungu river suggests intergradation between the two. Further collecting and field work in Angola is needed to elucidate this question, and possibly the two forms behave more like good species in central Angola than they do in Northern Rhodesia. In the latter area both Benson and I regard them as clearly conspecific and intergrading forms.

(g) *Variation in north east Africa.*

Grant and Praed place all the forms from the Sudan and Ethiopia to British Somaliland and Uganda and west Kenya as a single form, *griseoflava* Heuglin. Four additional names have been applied to birds from this area. I am not convinced that all these birds should be united as a single form, but series in good condition both of plumage and of preparation from critical areas are lacking, and statements in the literature are somewhat confused and contradictory. Adequate material should be collected to elucidate this question. The nature of the transition from *abdominalis* to these much less yellow forms needs special investigation as the ranges appear to approach each other quite closely.

(h) *Doubtful ranges.*

Grant and Praed (vol. 2) omit Kenya from the range of *abdominalis* despite the considerable range of that form in Kenya. They also extend *E. flavicrissalis* Sharpe into British Somaliland, although I have been unable to trace evidence of this. There are no *flavicrissalis* from British Somaliland in either the British Museum or the Coryndon Museum.

I am greatly indebted to the National Museum, Bulawayo for the generous loan of material used in this study, to Mrs. B. P. Hall for notes on British Museum material arising out of queries after I had examined it, to Dr. A. L. Rand and Mr. P. A. Clancey for information on several points, to the Coryndon Museum, Nairobi for the opportunity to examine their material, and to Mr. C. W. Benson for assisting in the study of material.

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Dr. J. G. Harrison, ''Merriewood'', Sevenoaks, Kent. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for ''Description'', ''Distribution'', ''Type'', ''Measurements of Type'', ''Material examined'' and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

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DINNERS AND MEETINGS FOR 1961

16th May, 19th September, 17th October, 21st November, 19th December.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent.

section

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Edited by
DR. JEFFERY HARRISON

1 SEP 1961
PURCHASED

Volume 81
No. 6

September
1961

1 SEP 1961
PURCHASED

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

Volume 81

Number 6

Published: 1st September, 1961

The five hundred and ninetieth meeting of the Club was held at the Rembrandt Hotel, S.W.7, at 6.45 p.m. on Tuesday, 16th May, 1961.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 26; Temporary Associates (Home), 2; (Overseas), 1; Guests, 11; Total, 40.

The Chairman opened with a welcome for Mr. Jack Livingstone, President of the Canadian Audubon Society; Mr. Roger Tory Peterson and Mr. Richard Pough from America and Mr. Claude Austin from Australia.

Some Reflections on the British List, with special reference to the unwritten rule that rare birds may not now be shot

Summary of a talk by R. S. R. FITTER

The British List covers all species of wild birds which are found or have occurred naturally within the geographical area of Great Britain and Ireland, i.e. not including the Channel Isles. It also includes subspecies, but this aspect is not discussed here.

In 1952 there were 426 full species on the British List, but since then no fewer than 24 have been added and three deleted or amalgamated (hooded crow, black-winged pratincole, meadow bunting), leaving a total of 447.

The question arises of whether or to what extent it is scientifically valuable to maintain such a list, taking into account the considerable energies needed to compile it and validate the records, or whether it is perhaps an outmoded idea of limited scientific value. It is obviously useful to have a list of the regular breeding birds, winter visitors and passage migrants occurring in any territory. The difficulties arise with the irregular visitors and vagrants, where we are up against the problems inherent in the validation of individual records.

The List Sub-committee of the Union judged the authenticity of records by (i) the credibility of the evidence and (ii) the probability of the occurrence being natural.

In considering the credibility of evidence, we must take into account the virtual impossibility of validating specimen records once they have passed into history and on the other hand the immense recent increase in skill in field identification, which makes many recent sight records more reliable than many old specimen records. The current revival of the controversy about the so-called "Hastings records" of rare birds alleged to have been shot mainly in the district between Hastings and Dungeness in the first two decades of the present century shows that no specimen records can be regarded as 100% certain once (or even before) those familiar with the immediate circumstances have passed away. On the other hand, the classic case of the Berkhamsted grey shrike in 1940–42 shows that sight records vouched for by even the most eminent field observers may yet be erroneous. Finally it is necessary to take into account the possibility of confusion between vagrants which are likely to occur in the British Isles and those which are almost indistinguishable in the field but highly unlikely to occur here. The

1960 report of the Rarity Records Committee cites three instances of this uncertainty, viz. duck blue-winged teal and cinnamon teal, great reed-warbler and *Acrocephalus stentoreus* and little egret and snowy egret.

It is in these last cases that the so-called unwritten rule that rare birds may not now be shot purely to establish their identity may be considered to be a special hindrance. This rule, incidentally, is of very recent origin, for only in 1948 the first British specimen of Bonelli's warbler was killed to make certain of its identity. Obviously trapping is the answer in many cases, if the bird can be trapped. (But in the subsequent discussion Mr. H. G. Alexander cited an instance where identification in the hand by two leading field observers had later been proved wrong by a third.)

The case of the alleged lesser scaup, which on being shot turned out to be a hybrid pochard x tufted duck, appears to be a limiting one. It was not just an isolated rarity, but one of several which had appeared more or less simultaneously. If it were to be held that the Nature Conservancy was unjustified in issuing a licence to shoot this bird, then the Conservancy might as well be deprived of its powers ever to allow a bird to be shot to settle its identity. Since, however, mistakes can happen alike with dead specimens, live specimens in the hand, and birds seen in the field, future ornithologists may well feel that shooting a bird does not really settle the question as firmly as used to be thought.

Turning to the List Sub-committee's second set of considerations, relating to whether the bird has occurred naturally or not, the main problem relates to escapes. The 1960 report of the Rarity Records Committee cites five species where the possibility of escapes could not be ruled out, viz. night heron, white stork, red-crested pochard, ferruginous duck and snow goose. It is in fact impossible ever to be absolutely sure that any rare bird seen anywhere has not escaped from captivity. This argument has most conspicuously been used to keep off the British List the great black woodpecker, with over 80 reported occurrences in the British Isles, although the bird is very rarely kept in captivity, and in fact only three instances of it escaping or being released are on record.

A further question arises when birds that have undoubtedly escaped from captivity establish themselves as breeding species. It took the Canada goose about 100 years to qualify as a British bird, and recently the mandarin duck was turned down with a residential qualification of about 30 years. As a result, protection could not be obtained for it, and it may well be wiped out again by shooting before it attains the apparent qualifying period of 100 years.

The formerly contentious question of whether North American passerines could reach the British Isles by natural means had now been settled by agreement that some of them certainly can and do, while if others have an assisted passage on board ship this does not affect the issue of naturalness.

The upshot of the foregoing considerations is that there can be no 100% certainty of any individual record, whether or no it is backed by a specimen. Too much depends on the veracity and credibility of individual witnesses, which cannot be judged after a lapse of time, any more than the credulity of former editors of journals can be definitively judged by those who never knew them. This would seem to support the unwritten rule. What are the implications for the British List?

I should like to put forward some tentative proposals, first for a decinneal revision, since such substantial changes are now taking place, especially in the status of certain passage migrants and breeding birds such as the collared dove, osprey, wryneck and black-tailed godwit, and second for the division of the List into two parts, viz.

Part I, the scientifically most important part, to contain breeding birds and regular winter visitors and passage migrants.

Part II, scientifically less valuable because inevitably based on records which cannot all be 100% certain, for the irregular visitors and vagrants. These might well be classified into those of which 10 or more had occurred in the past ten years, those of which fewer than 10 had occurred in the past ten years, and those of which none had occurred in the past ten years. This might give a more realistic look to the British List, which at present does not even reveal which birds have not been recorded during the 20th century.

Finally, in view of the fact that no individual record can be 100% certain for all time, I would like the List Sub-committee to consider the inclusion, possibly in a separate category, of records which it considers at least 95% certain, but with a scintilla of doubt remaining. It would be especially valuable if extreme rarities in this category could be officially placed on record.

In the discussion which followed, Mr. Fitter's ideas were supported by Mr. Jack Livingstone, while Mr. Roger Tory Peterson pointed out that there was little harm to the species in shooting a vagrant, apart from its aesthetic value, as it would be unlikely to survive in any case. Dr. Ian Nisbet ("British Birds" Rarities Committee) supported this view in special circumstances, such as the shooting of the pochard x tufted duck hybrid, where one of a group was being collected and he felt that the American oriole ringed on Bardsay Island should have been collected, as it remains unidentified. Mr. H. G. Alexander (B.O.U. Records Committee) stressed the great skill with present day field identification, but quoted the problem of the Fair Isle western sandpiper, which was wrongly identified, although examined in the hand by himself and Mr. Kenneth Williamson, for Dr. Nisbet now considered it was a western sandpiper, whereas it was originally recorded as a semi-palmated sandpiper. Mr. Max Nicholson spoke of the excellent work done by both the B.O.U. Records Committee and the "British Birds" Rarities Committee. He did not support Mr. Fitter's ideas for changes in the official List, while Mr. C. J. O. Harrison thought that the use of the List results in some absurdities in the law. Dr. James Harrison strongly disapproved of the rejection of the "Hastings records", stating that as a boy he had seen a rujous warbler in his garden at Hastings and three days later, the bird being mounted in George Bristow's shop. He could see no point now in doubting the word of well-known ornithologists, who investigated those records at the time, particularly in view of the many rarities identified in the same area since the last war.

Dwarfism in a Pheasant

by J. S. Ash

Received 5th November, 1960

A very small cock Pheasant (*Phasianus colchicus*) in its first winter plumage was recently sent to me by D. J. Cowen, Esq. It had been shot on about 24th October, 1960 at Oundle, Northamptonshire. Except for its small size and light weight, the bird was normal; there was no sign of the emaciation which is characteristic of most birds having a low body weight, there were good deposits of subcutaneous fat, and there was no evidence of disease or injury. Except for a post-mortem change in colour, the testes were normal in appearance.

As the condition of dwarfism is apparently extremely rare in birds, it is of interest to compare a few of its standard measurements with those given in *The Handbook*. The weights are taken from Blank and Ash (in preparation):—

	Measurements in mm.	
	The Handbook	*Oundle bird*
Wing	235–260	219
Tarsus	60–78	50
Bill (from feathers)	28–32	26
Tail (central)	420–520	419
Weight	1394 gms.*	510.3 gms.

* average of 1668 wild first-winter cocks, range 850.5–2069.6 gms.

On the basis of wing moult, the bird was between 15 and 16 weeks of age.

As far as I know, the presence of the growth hormone has not been demonstrated in the pituitary of birds: although hypophysectomy retards the growth of birds, this does not mean that the retardation is specifically due to the absence of the growth hormone. Unfortunately, decomposition was too advanced in the present specimen to permit an examination of the region of the pituitary.

Landauer (1929) has described in detail a case of thyrogenous dwarfism (*Myxoedema infantilis*) in the domestic fowl. This was 'proportionate' dwarfism comparable with dwarfism of a pathogenic origin in humans. The few measurements taken of the Oundle bird suggest, however, that this was a case of 'disproportionate' dwarfism, and the causal factor should perhaps be sought elsewhere. This example is probably more closely parallelled by the dwarf *Larus* "*capistratus*" variety of the Black-headed Gull (*L. ridibundus*) discussed by Hazelwood and Harrison (1953).

References:

Blank, T. H. and J. S. Ash (in preparation). Body weights of Pheasants (*Phasianus colchicus*), Red-legged Partridges (*Alectoris rufa*) and Partridges *Perdix perdix*).

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The Significance of some Plumage Phases of the House-Sparrow, *Passer domesticus* (Linnaeus) and the Spanish Sparrow *Passer hispaniolensis* Temminck*

PART ONE

by JAMES M. HARRISON

Received 2nd January, 1961

I. INTRODUCTION

The above research was prompted by the report of a meeting of the British Association in Bristol in 1955 when subsequently, in an article in *The Daily Telegraph* (3rd September, 1955), a claim was made by Robin Cormack, then a pupil at the Bristol Grammar School to the effect that the sexes of young House-Sparrows, *Passer domesticus domesticus* could be differentiated in the field by the presence in the males of a white, or pale spot behind the eye. In so far as this claim is concerned it may be said to have been substantiated by this investigation though, in the material examined by the writer, this character was not absolutely constant for in some individuals it was absent, in others unilateral only and in none did it seem to constitute a good field character; while these were the findings on the material for this paper, one cannot rule out the possibility that Cormack may have handled a population in which the white eye spots were apparently more pronounced.

The present study was suggested to me by Mr. J. D. Macdonald to whom I am indebted for the loan of the British Museum file with the original reference and certain correspondence.

Full juveniles of *P. domesticus* are sadly lacking in most collections, both public and private it would seem, and before any progress could be made at all it was necessary to collect and prepare specially some 70 specimens of positively, i.e. anatomically, sexed individuals to augment such other material as was available; in all about 100 juveniles came under review. The total material seen, i.e. birds of both sexes and all ages amounted to approximately 500. It must also be mentioned that unless meticulous care is taken in the preparation of the material, the white spots and other head characters can easily be effaced. In the course of these investigations it became apparent that there were other characters of very considerable interest and the scope of the enquiry was therefore broadened to embrace the possible significance of certain of these characters, which were found not only in the juveniles and in birds of the year, but also in adults.

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*A Summary of this paper was read at the British Ornithologists' Union York Conference on 25th March, 1961.

II. SCOPE

It is not intended that this communication should deal exhaustively with individual variation for this, both in *P. domesticus* and *P. hispaniolensis* is considerable in so far as colour shades, bill colour, etc. are concerned, nor is it intended to deal primarily with geographical races, in fact this aspect of the problems involved will only be mentioned in so far as it is related to the bearing on phylogeny and affinity.

This latter aspect had indeed already been recognised, for Bodenstein (1) (1953) recorded a *hispaniolensis*-like head pattern in an example of *P. d. domesticus* from Central Europe, while one need only refer to such a recent work as *A Field Guide to the Birds of Britain and Europe* (2) to see the *hispaniolensis* pattern of the head portrayed. However, it should at the same time be stressed that the fully developed pattern is by no means a constant character in *P. domesticus*, for it is mostly vestigial, sometimes on one side only and by no means infrequently absent. It is to be noted particularly however, that it is almost constant and usually well developed in the race *P. d. italiae*, so that one can state that this is linked with the chestnut crown as in *P. hispaniolensis*, a combination of characters of important phylogenetic significance.

III. SALIENT SPECIFIC CHARACTERS

The approach to the problems of phylogeny and affinity is to be made along orthodox lines, viz: the recognition of the salient characters of the two species and the observation of the incidence of what would appear to represent specific unit characters occurring in one or the other, as indicating possible phylogenetic relationship. The general characters of the two groups are as follows:—

(*A*) THE *PASSER DOMESTICUS* COMPLEX

Juveniles: Although in general there is little overall difference between the sexes, there are some differences by which certain individuals may be presumed to be of one sex or the other, but such sexual dimorphism as there is is not constant and a state of juvenile intersexuality is apparent.

Very broadly the following table sets out such differentiating characters as exist even if only inconstantly:—

Characters:	♂♂	♀♀
Chin and throat:	Dusky	Whitish
White spots behind eyes:	Present	Absent
Post-ocular stripe:	Usually more colourful, cinnamon to bay or russet range.	As a rule ash to drab or bistre range.

(See Plate I)

Stress must be laid again on the fact that the white eye spots, in the material examined were often very inconspicuous, sometimes unilateral and occasionally absent as already stated. The fact that this character is not very constant is in itself significant. In fact, again on the material examined there was no secondary sexual character in the juveniles which could be stated to be absolutely constant and reliable. The most one can say is that most of the males show a dusky throat patch, pale or whitish spots behind the eyes and a more colourful post-ocular stripe than the females, and that the latter usually lack the dusky throat patch, rarely apparently have white eye spots and have a dull post-ocular stripe.

On the freshly collected juvenile material forming the basis of this paper it was found that approximately 5% of males lacked the dusky throat patch and 6% of females showed the character, thus indicating a degree of intersexuality. Nichols (³) in his excellent paper on seasonal individual variation in this species, classifies the juveniles into three types as follows:—

Type–A. which "is not noticeably different from the adult female".

Type–B. which "is characterised by a slight mark which is yet distinctive when attention is called to it, a narrow, sharply defined pale or whitish arched streak from the eye to the bill (nostril-ward) (See Plate II B). This was more or less regularly correlated with whiter underparts than usual, the whitish extending on to the cheeks, and a faint but evident dusky chin-and-throat patch, and noted in six or seven young birds out of sixteen trapped from 9th to 17th June 1932. It was thought at the time to be the plumage of the juvenal male but it probably has not that significance." Since, of course, these birds were not controlled by anatomical sexing the observation could not be significantly assessed and the recognition of a juvenile intersexuality was not, under these circumstances, possible.

Weaver (⁴) commenting on the dusky throat patch remarks "By the tenth day after hatching the color pattern is evident, showing a wing bar, and in some males a black bib". From this it is apparent that this author also recognised the fact that as a secondary sexual character the dusky throat patch in males is not invariable.

Since the exposure of certain homologous characters occurs at different stages of development the material of this study was divided into two groups, viz: (*a*) full juveniles and (*b*) first winter, first summer and adult individuals.

Having considered the morphology and the unreliability of the sexual dimorphism in the juveniles, it is necessary now to detail the specific and subspecific characters of the more mature birds, which, of course, show very marked differences in the two sexes, already striking even in freshly moulted birds of the year.

The characters of the males in these more mature ages are too well known to demand detailed description and it is sufficient to enumerate the grey crown and black gorget as characteristic of this sex and the absence of the contrasting crown and black gorget in the females, while it is, of course, necessary to note again that the crown colour of the males of the race *P. d. italiae* is rich chestnut, a fact which, in the writer's opinion, is not devoid of phylogenetic significance as already mentioned.

Very briefly it can be stated that the first winter males of the species, with the exception of the race *italiae*, can be recognised by the less pure grey crown and the broader chestnut edges to the secondaries particularly, this latter distinction applying also to the race *italiae*, in which the chestnut is less rich.

First summer birds are less easy to be certain of and it is doubtful whether they can in most cases, in fact, be differentiated from adults.

Adult males have black throat and gorget, grey crowns, chestnut lesser and median wing-coverts and brightly striated mantles which show chestnut in varying amount.

Females in their first winter plumage show the broad edges to the secondaries which are lacking in the adults while they have, of course, normally uniform sombre brown coloured crowns, drab post-ocular stripes, no white eye spots and no black gorget. A very recent study into the individual variation in *Passer domesticus* was made by Keve (1960) (^{5}) which also contains a valuable assessment of the vexed question of the geographical races of the species. There is also a very full bibliography of recently published literature.

(*B*) THE *P. HISPANIOLENSIS* COMPLEX

Although very few juveniles were available, the juvenile morphology of this species conforms very closely to that of the former species group and need not, therefore, receive detailed description here. However, it must be noted that a percentage of the first winter and adult females are morphologically distinct, while others are scarcely to be differentiated from those of *P. domesticus*.

This is a point in the writer's opinion of special significance and will be discussed in a later section. In those female individuals of *P. hispaniolensis* which closely resemble those of *P. domesticus* it has been noted that the mantle striations are, brighter and more contrasting (*fide* Mendelssohn in *litt.* 18th September, 60) and this appears to be the only distinction. The morphology of the adult males of *P. hispaniolensis* assume a great importance in relation to this problem for to them can be referred certain of the recurring homologous characters observable in juveniles of *P. domesticus* males and also in some later plumage stages of that species.

The characters which invest *P. hispaniolensis* with this importance are in the males:—

(*a*) the chestnut crown,

(*b*) the white lines which run from base of bill backwards over and behind the eyes,

(*c*) the pattern of the black gorget, and

(*d*) the striations of the breast and flanks.

Mention has already been made of the fact that certain females of this species are easily distinguished from those of *P. domesticus* and the characters which make this possible are (1) the presence of a dusky throat patch and (2) some degree of striation of the breast and flanks.

IV. EVIDENCE OF PHYLOGENY AND AFFINITY

There are certain homologous characters which, occurring in one or the other of the two species have great value in assessing relationship, and these can be grouped as to whether they find exposure during the stage of full immaturity or in birds after completion of the post-juvenile moult, i.e. as first winter, first summer or as adult birds.

It is now probably generally accepted that homologous characters of a transient nature can occur in the juveniles of different species and may, therefore, reflect the phylogeny of the group and the following instances in *P. domesticus* illustrate this hypothesis excellently.

The evidence as afforded by the full juveniles of this species is provided by the exposure of the following characters; firstly we may consider the white eye spot; this is undoubtedly the remnant of the white markings which are so constant in *P. hispaniolensis* males and which extend from the base of the bill backwards over and beyond the eyes. These in *P. domesticus*, as has been already stressed, are often inconspicuous and vestigial, not infrequently only on one side and sometimes completely absent, as may also be the post-ocular stripes; secondly an important feature especially of the juvenile males of *P. domesticus* is the dusky throat patch. This is, of course, quite distinct from the black gorget which is acquired by the post-juvenile moult. It is the writer's opinion that the dusky throat patch is indicative of an affinity to *P. hispaniolensis* in which species a throat patch occurs in all males and in a certain percentage of females. Finally in 10%, or possibly even in a higher percentage of full juvenile males of *P. domesticus* striations in distribution similar to those of the adults of *P. hispaniolensis* occur. These striations are, of course, a ''ghost'' pattern but are nevertheless very definite. (See Plate III). Nichols (*loc. cit.*) describes in his type–B juvenile ''a narrow sharply defined pale or whitish arched streak from the eye to the bill''. This character is rare in juveniles of *P. domesticus* but more common in first year and adult males though usually incomplete or vestigial and sometimes entirely lacking: it is undoubtedly derived from *P. hispaniolensis*, (See Plate II B).

If we now come to the first winter and adult males of *P. domesticus* the characters to which attention is to be directed are the following:—

(*a*) the white markings in the head already described for *P. hispaniolensis*
(*b*) the white eye spots,
(*c*) the character of the black gorget, and to a lesser extent
(*d*) the colour of the crown.

With regard to (*a*) this is by no means always present and may be said to be more usually vestigial, unilateral or absent. In its most vestigial form even when apparently absent, remnants can often be detected by scrutinising the bases of the feathers arising near the nostrils and at the rictus; (*b*) the white eye-spots may be conspicuous or the reverse or, again, may be unilateral or absent; this state of affairs suggests that it is a phylogenetic character which is in the process of being eliminated. The characters observable in (*c*) the black gorget assume a considerable importance, for both in extent and character it shows variation. The most significant of these is that type in which the lower border does not end as a straight line but shows a series of arrow-heads directed downwards towards the breast and flanks, while some specimens also show suggestions of striations arising from them which at once recalls the *hispaniolensis* pattern, especially in individuals in which the striations are present even if weakly developed, (See Plate IV). Although (*d*) the colour of the crown is less liable to reflect phylogeny there are nevertheless some instances of isolated

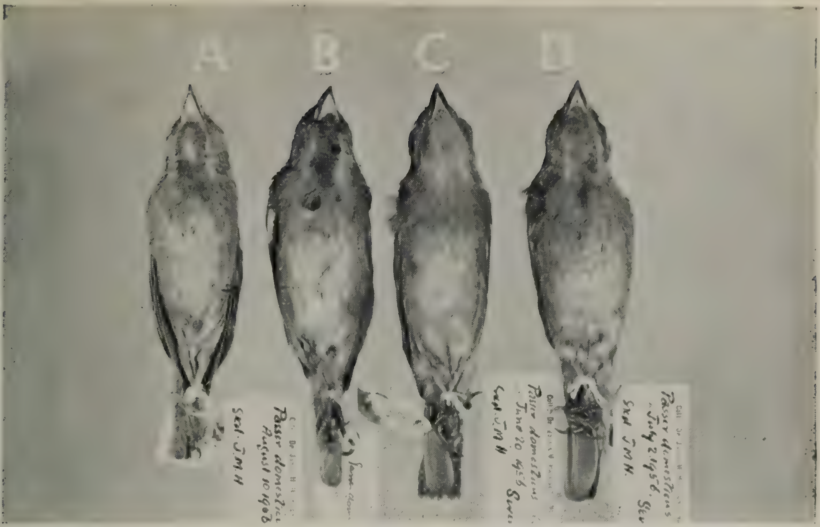


PLATE I. Juveniles of *Passer domesticus domesticus* (Linnaeus).
A. Male with dusky throat patch.
B. Male showing dusky throat patch moulting into black gorget of first winter plumage.
C. Female, no dusky throat patch.
D. Female with dusky throat patch illustrating juvenile intersexuality.

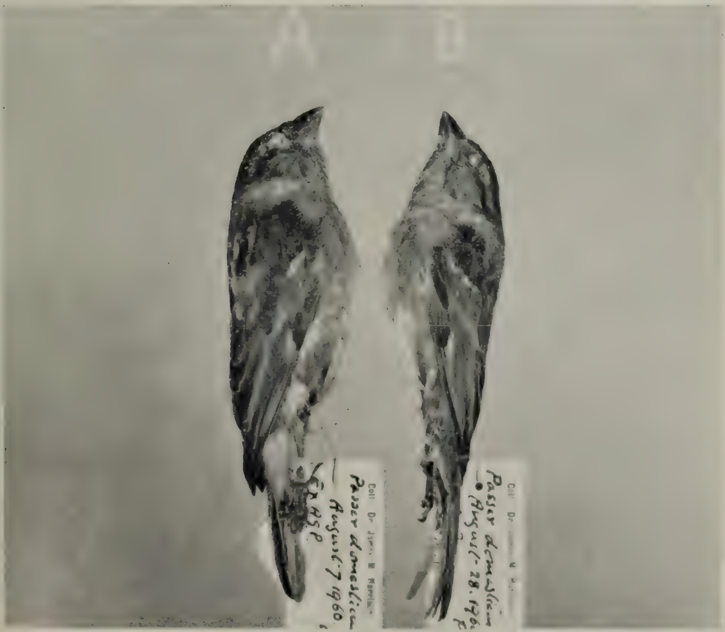


PLATE II. A. Juvenile showing conspicuous white eye spot.
B. Juvenile showing pale arched line from base of bill to beyond eye.

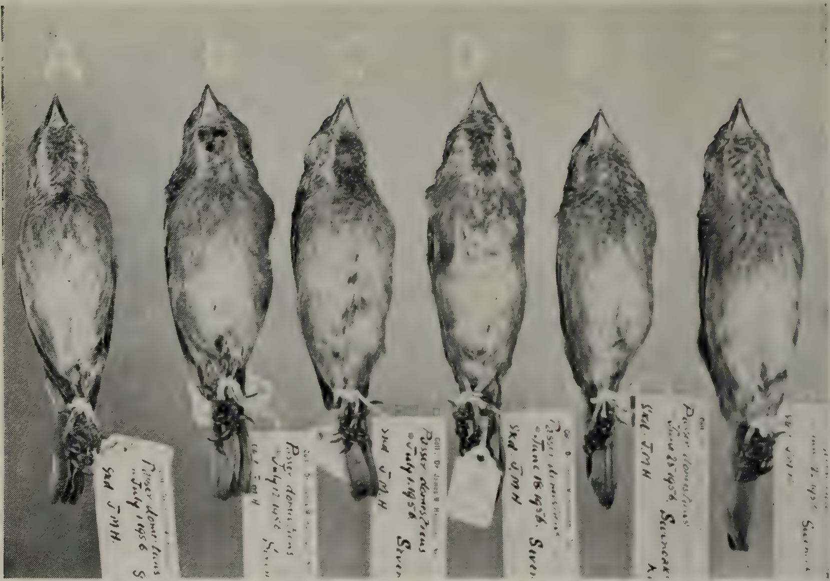

A
B
C
D
E
F
Passer domesticus
July 1956
Skd. J.M.H.

PLATE III. Juvenile males A—F showing dusky throat patches and variable striations of underparts, "ghost" *hispaniolensis* pattern: all specimens from the Sevenoaks district of Kent.

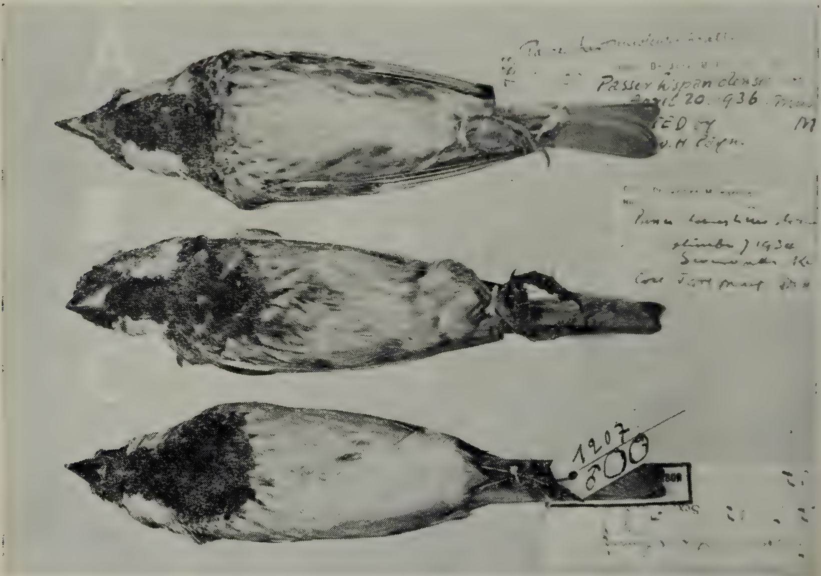

A
Passer hispaniolensis
April 20. 1936
M
1207
600

PLATE IV. Overlap of characters in the adult males of the two species. Lower borders of gorgets in *P. d. domesticus* showing "arrow-heads" and striations of breast and flanks.
A. *Passer hispaniolensis hispaniolensis* Temminck Malta.
B. *Passer domesticus domesticus* (Linnaeus) British Isles.
C. *Passer domesticus domesticus* (Linnaeus) Switzerland.

chestnut feathers occurring on the top of the crown where normally no chestnut is found in *P. domesticus*, except, of course, in the race *P. d. italiae*. In this connection the position of *P. d. italiae* is of importance for if, as I contend, *P. domesticus* has evolved from *P. hispaniolensis* then this race in its evolution has retained the chestnut crown of the latter species. Some support to this theory is lent by the fact that in *P. d. italiae* the white markings on the head which are so characteristic of *P. hispaniolensis* are almost as strongly marked and constant in *P. d. italiae*. These findings point to *P. d. italiae* being very close to *P. hispaniolensis*.

Occasional adult males of *P. d. domesticus* from Europe can be found in which the centres of the crown feathers are dark sepia giving the appearances found in some less strongly differentiated examples of *P. d. tingitanus* from North Africa. Nichols in his paper (*loc. cit.*) has the following comments to make upon the inheritance of homologous characters: "They suggest potential more or less complete and unlike patterns in House Sparrow heredity which crop out in young birds, less standardised than adults. Strangely enough I find a white streak from eye to bill obviously homologous with that in type–B birds in normal males of *P. jagoensis* from Cape Verde Islands and its race *ruficinctus* of the South and East African mainland."

Having now considered the broad morphological characters of the two species groups there yet remains to be discussed the interesting position of the sex anomalies.

(*to be concluded*)

Variant winter plumage of the female Tufted Duck

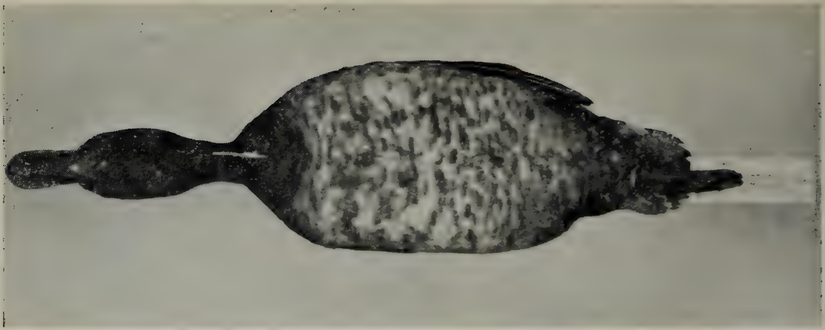
by JAMES M. AND JEFFERY G. HARRISON

Received 31st December, 1960

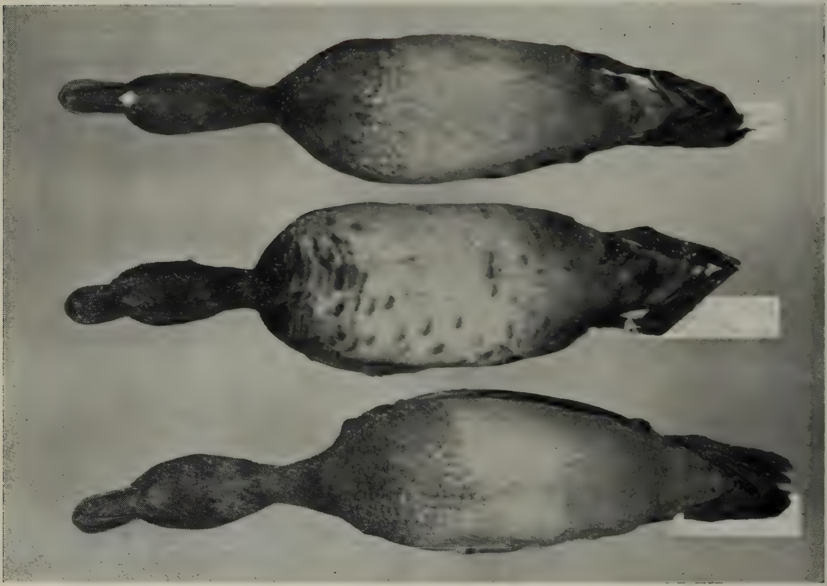
With regard to the discussions[1] [2] following our original communication[3] on variant plumage of the female Tufted Duck, *Aythya fuligula* Boie, we are now in a position to take this matter a stage further. In the spring of 1960 a brood of Tufted Duck was hatched in captivity. One of the young when moulting into its first winter plumage showed signs of the dark brown flecking of the white underparts, which E. H. Gillham considers to be a normal type of summer plumage, as described in *The Handbook*[1]. The bird was kept in captivity and it unfortunately died of an acute aspergillosis, without loss of weight or general condition on 5th December, 1960.

The skin was prepared and careful note was made at the time of the state of moult. This was in effect complete and there was no evidence of any active moult anywhere. It is now in the collection of J.M.H.

When it died in mid-winter, this specimen possessed underparts more heavily flecked with dark brown than any of the three specimens originally illustrated by us and it proves conclusively that the plumage we described is neither that of the adult nor the immature female, nor is it a summer plumage. It is, in fact, an unusual variant first winter plumage. It yet remains to be seen, from captivity birds of known age, what the subsequent adult seasonal plumages of this mutation may be or whether it is a phase restricted to homologous recessive individuals, during the first winter plumage only.



Variant first winter female Tufted Duck; 5. xii. 1960, showing heavy brown flecking of the underparts.



Three young Tufted Duck of the same brood. The upper and lower birds show the normal subdued barring of the immatrice. The centre bird shows abnormal dark flecking.

The specimen now described is illustrated in the accompanying plate and we are also publishing a plate showing three first winter Tufted Duck of the same brood, which should have appeared in our second paper on this subject[2]. Two show the accepted type of immature plumage, presenting the barred belly and vent, while the centre bird, which was also the centre bird of our original plate[3], shows in addition to the normal *subdued* barring of the belly and vent, the coarse and more generally distributed dark flecking to which we originally referred.

We are indebted to Dr. Edmund Gleadow for the new specimen.

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More aquatic predators of birds

by CHARLES R. S. PITMAN

Received 2nd January, 1961

PART III

(V) CHELONIANS

AFRICA: SOUTH AFRICA. Miss Courtenay-Latimer writes "Our Fresh Water Tortoises, *Pelomedusa subrufa* Gray are extremely common on all our water courses. They consume young waterfowl and their eggs". Specific cases quoted are:— A water tortoise (20.10.41) ate a two days' old duckling of the Black Duck, *Anas sparsa*, near Port Elizabeth. Also, on the Thomas river, Eastern Cape, at least on four occasions whilst studying the breeding habits of the Yellow-billed Duck, *Anas undulata* Dubois, water tortoises either ate the eggs or devoured the ducklings when two to three days' old.

According to *African Wild Life* ([20]), the carnivorous water tortoise, *Pelomedusa subrufa* is disliked because of its habit of seizing small ducklings, etc. by the leg as they swim on dam or river, and then drag them to the bottom to drown before devouring them. Many a farmer has lost much of his young feathered stock to this underwater thief.

In ([13]: p. 65) it is recorded that other predators of waterfowl which from time to time require control include water tortoises. A. C. Harrison, Secretary of the Cape Piscatorial Society, with reference to aquatic predators of birds, writes "the water tortoise is a minor predator".

NORTHERN SNAPPING TURTLE, *Chelhydras serpentina* (Linn.)

NORTH AMERICA: CANADA: ONTARIO. In a communication from the Chief, Fish and Wild Life Branch, Department of Lands and Forests, Ontario, a biologist Mr. H. G. Lumsden recalls having found a half-grown Mallard Duck in 1949 at Lake St. Clair with one leg severed above the tarsal joint. The bird although drowned was still warm. He believed that it was the work of a Snapping Turtle. It is well-known that this chelonian, which attains a size of 15 inches across the carapace and a weight of 30 lbs. (occasionally as much as 60 or 70 lbs.), will prey on waterfowl as opportunity offers.

NORTH-EASTERN UNITED STATES. ([21]: p. 63) In the stomachs of 470 Snapping Turtles examined, the only birds found were Wood Duck, *Aix sponsa* (L.) .5 (volume) and Red-winged Black bird, *Agelaeus phoeniceus* (L.) .6. The percentage *frequency* of their finding was respectively .4 and .2. This would suggest that the Snapping Turtle is not a serious predator of waterfowl, though the general belief is to the contrary.

Once again I am greatly indebted to all those who have so kindly provided me with such a wealth of information based either on their own experience or on that of others, or who have invited my attention to relevant references. In particular, I am most grateful for the help afforded by various correspondents in Canada, which has opened up for me a vast new field of highly rewarding research.

SUMMARY

In continuation of *ibid* 77 (6, 7 and 8) several points of special interest emerge from these notes; first, the claim that "there is no evidence that African Otters prey on birds" is entirely erroneous; secondly, the South African Water Tortoise, *Pelomedusa subrufa* as a predator of ducklings, such as the Black Duck, *Anas sparsa* and the Yellow-billed Duck, *Anas undulata*, and waterfowl eggs is a serious pest; and thirdly, Ocypode Crabs may or may not be guilty of serious predation. There is additional confirmation that the Nile Crocodile, *Crocodylus niloticus* of sizes between one metre and four metres in length preys to a certain extent on birds; and it seems possible that not infrequently the crocodile takes its toll of the drinking *Quelea* swarms. Interesting information has also been obtained on the predacious habits of some species of sharks, not previously mentioned.

HABITUAL PREDATORS OF BIRDS

(To add to previous list)

MARINE	FRESHWATER
Fur Seal, *Arctocephalus tasmanicus*	Otters—*Lutra maculicollis* and *Aonyx capensis*
	South African Water Tortoise, *Pelomedusa subrufa*

PREY

An additional predator of penguins, in particular the Little Penguin, *Eudyptula minor*, is the Fur Seal (*Arctocephalus*); marine predators are known to take gulls.

Additions to the Nile Crocodile's avian prey include Flamingos; Spoonbill (*Platalea*); Purple Gallinule, *Porphyrio alba;* Allen's Gallinule, *Porphyrula alleni;* African Moorhen, *Gallinula chloropus*; various Ducks; Blacksmith Plover, *Hoplopterus armatus;* Black-faced Sandgrouse, *Pterocles decoratus;* various doves (*Streptopelia* and *Turtur*); and an Estrildine Finch. There is reference to the Estuarine Crocodile, *Crocodylus porosus* taking *Pelecanus conspicillatus* and the Indian Marsh Crocodile, *Crocodylus palustris* taking (presumably Whistling) Teal.

The Nile Monitor, *Varanus niloticus*, in the vicinity of a breeding colony of the White-fronted Bee-eater, *Melittophagus bullockoides* is recognized as an enemy.

There is more evidence of *Clarias* and Trout preying on nestling birds. *Silurus glanis* is said to take waterfowl as large as ducks. Tiger Fish (*Hydrocyon*) are recorded rising to and taking Swallows. The Northern Pike, *Esox lucius*, in Canada, is a predator of waterfowl.

OTTERS AND VIVERRIDAE

In southern Africa the Otters, *Aonyx capensis* and *Lutra maculicollis*, particularly the former, can be ruthless, wasteful killers, their prey including the Mute Swan, *Cygnus olor;* Black Duck, *Anas sparsa;* Whistling Teal, *Dendrocygna bicolor;* Little Grebe, *Podiceps ruficollis;* and various other waterfowl; also domestic geese, ducks and fowls.

The European Otter, *Lutra lutra* is said sometimes to prey on seabirds. In Sweden, the remains of Mallard, *Anas platyrhynchos;* Coot, *Fulica atra;* Starling, *Sturnus vulgaris;* and *Delichon* (House Martin) or *Hirundo* (Swallow); have been found in its droppings.

The Marsh Mongoose, *Atilax paludinosus* and the Grey Mongoose, *Herpestes ichneumon*, too, can be very destructive to waterfowl and their eggs.

LESS IMPORTANT PREDATORS

MARINE. Greenland Shark, *Somniosus microcephalus.*

FRESHWATER. Sheetfish, *Silurus glanis;* and Northern (American) Snapping Turtle, *Chelhydras serpentina.*

INVERTEBRATE PREDATORS: CRUSTACEANS

Disastrous predation by some species of Ocypode Sand Crabs—for instance on the White-faced Petrel, *Pelagodroma marina*—is confirmed; on the other hand there are species of these Sand Crabs which inexplicably do not molest the young and eggs of seafowl.

The Coconut Crab or Robber Crab, *Birgus latro*, which is one of the predacious Land Hermit Crabs, eats the eggs of the Sooty Tern, *Sterna fuscata.*

Crabs of the genera *Ocypoda* and *Birgus*, although found on sea-girt islands, are mainly land creatures.

INJURIES

Further recorded cases of injuries on a somewhat extensive scale to the legs of seafowl are as before of obscure origin.

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The status of *Mirafra pulpa* and *Mirafra candida*

by B. P. Hall

Received 26th January, 1961

Mirafra pulpa Friedmann, 1930 (April), Occ. Papers Bost. Soc. Nat. Hist. 5: 257—Sagon River (north side), southern Shoa, Abyssinia. (Here restricted to Sagon River at long. 37° 30′ E. from map of expedition, Bull. U.S. Nat. Mus. 153, 1930: 7.)
Mirafra candida Friedmann, 1930 (July), Auk 47: 418—northern Guaso Nyrio River, River, Kenya. (Here restricted to Archer's Post from map of expedition.)

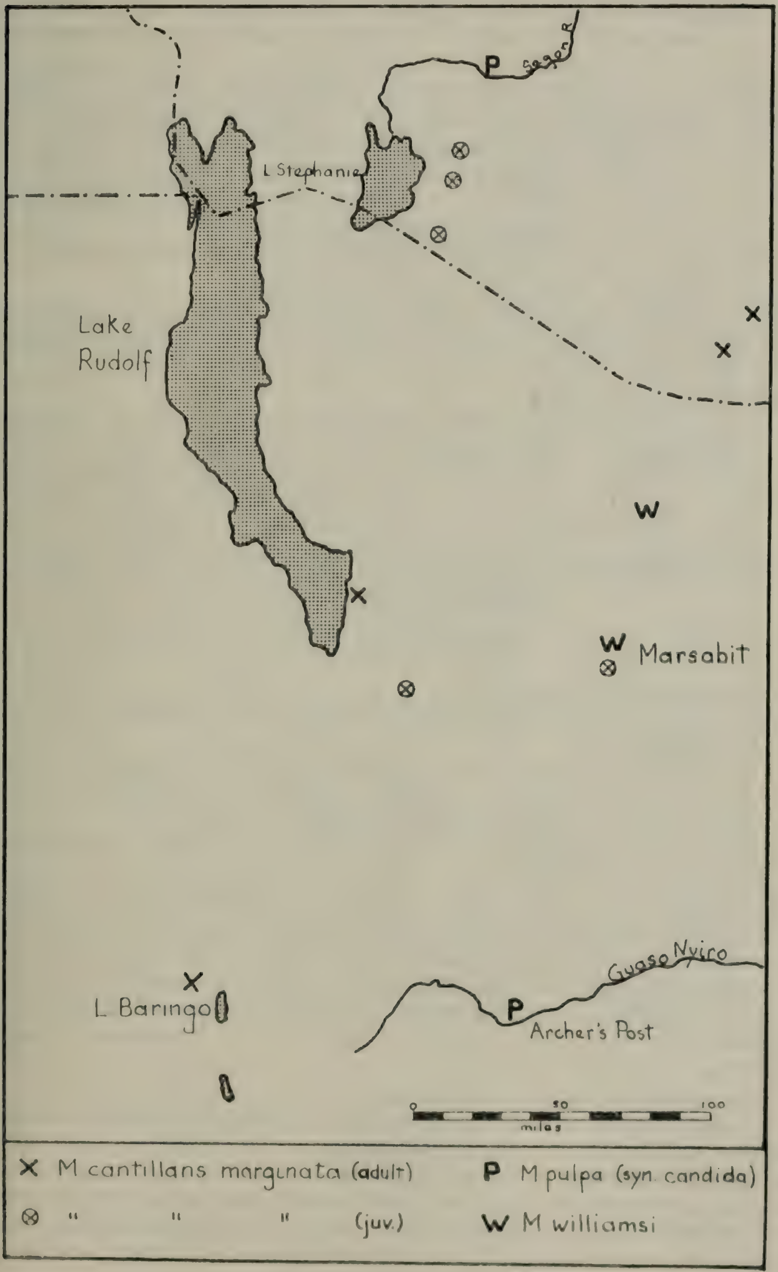
History

Mirafra pulpa was described on a single specimen collected on 19th May, and *M. candida* on one adult and two young birds collected in early August 1912, on the Childs Frick Abyssinian Expedition. *M. pulpa* was considered closest to *M. passerina* of southern Africa, a form now believed to be conspecific with *M. cantillans* by White (*Bull. Brit. Orn. Cl.* 76, 1956: 3). Friedmann compared *M. candida* with *M. cantillans marginata*, also collected on the expedition, but mentioned no comparison between *candida* and *pulpa*. Grant and Mackworth-Praed (*Bull. Brit. Orn. Cl.* 49, 1939: 157), from photographs of the type of *pulpa*, concluded it represented only a rufous phase of *M. cantillans marginata*, and both *candida* and *pulpa* were listed in the synonymy of *M. c. marginata* in the *African Handbook of Birds*, vol. 2. White (Peters in *Check List of Birds of the World*, vol. 9), left the status of both species in doubt, but subsequently (*Bull. Brit. Orn. Cl.* 80, 1960: 22), also without having access to the type, considered *pulpa* to be conspecific with *M. williamsi* Macdonald (*Bull. Brit. Orn. Cl.* 76, 1956: 71—Marsabit) and an earlier name for it.

Material examined (see Map)

Through the kindness of Dr. Friedmann I have been able to borrow from the United States National Museum the type of *M. pulpa*, the type and one immature specimen of *candida*, an adult *M. cantillans marginata* from the south end of Lake Rudolf and young birds from the east of Lake Stephanie and the Indunamara Mts south of Lake Rudolf, all collected on the same expedition. Mr. M. A. Traylor has also kindly sent me from the Chicago Museum four young birds from Marsabit, out of a larger series collected there by Van Someren. I have compared all these in the British Museum with the type and three other specimens of *M. williamsi*, and a series of *M. c. marginata* which includes adults from Mega, Yavello and Alghe, southern Abyssinia, and the Baringo district, western Kenya.

The adults of *M. c. marginata* are alike but the young birds from the Indunamara Mts. and Marsabit are in series more sandy orange than those from further north, which is partly, but may not be wholly, due to soil-staining. Apart from this colour difference they are similar to the others and, although there is always a possibility of error in the identification of young larks without their parents, I believe them to have been correctly identified as young of *M. cantillans*.


P Sagan R
L Stephanie
Lake Rudolf
W
W Marsabit
L Baringo
Guaso Nyiro
P Archer's Post
0 50 100
miles
X M cantillans marginata (adult)
⊗ " " " (juv.)
P M pulpa (syn. candida)
W M williamsi

Relationship of M. pulpa and M. candida

When sending me the types of *pulpa* and *candida* Dr. Friedmann wrote that he could no longer feel certain that the two species were distinct, and after examination I also believe them to be conspecific. Some differences in colour and pattern are due to the type of *candida* being in very fresh plumage, in which moult is not quite complete: the dark tones appear rather brighter and richer than in the type of *pulpa*, and the pale edges broader, giving a more patterned effect. There is little difference in size (see Table) none in feet and claws, and the bills are similar though not identical, that of *pulpa* being a trifle more pointed and narrower across the culmen. I therefore propose that *candida* be considered a synonym of *pulpa*, and hereafter the name *pulpa* only will be used in discussing the relationship of the four specimens of *pulpa/candida* to other species.

Relationship of M. pulpa to M. cantillans marginata

The specimens of *M. pulpa*, both adults and young, are distinguished from all of *M. cantillans* by the rich rufous of the mantle and the edges of the wings. There are however other small differences which have not received much attention.

(a) The innermost secondaries and central rectrices of *M. pulpa* have a dark line separating the brown centres from the pale edges, giving a pattern similar to that found in *M. rufocinnamomea* but not in adult *cantillans*. Young birds of *cantillans* have an indication of this line but it is narrower and less pronounced than in young *pulpa*. Also, in fresh plumage, the head feathers of *pulpa* have wide light edges with the dark centre narrow and tapering to a point at the tip of the feather, whereas in *M. cantillans marginata* the light edges are narrower with the dark centre broad and rounded at the tip, following the contour of the feather. This makes *pulpa* appear more streaky on the head and *marginata* more scalloped.

(b) The rectrices of *pulpa* are narrower and more pointed than those of *marginata*.

(c) The bill of *pulpa*, in even the smaller of the two adults, is heavier than that of *marginata*, broader at the base and wider across the ridge of the culmen, though the lengths are similar.

(d) As White pointed out *pulpa* is longer in the wing and tail than *marginata*. (see Table).

These differences, each small, are together sufficient to make it difficult to accept that *pulpa* is either a colour phase or a subspecies of *M. cantillans*. Also the occurrence of *marginata* east of Lake Stephanie and south of Lake Rudolph suggests that *pulpa* and *marginata* are partly sympatric. I believe it is therefore best to consider *M. pulpa* as a distinct species. It may possibly be related to *M. cantillans* much as *M. hypermetra* is to *M. africana*.

Relationship of M. pulpa to M. williamsi

White points out the similarity in size between *pulpa* and *williamsi:* in addition *williamsi* has a similar patterning on the secondaries and central rectrices. Nevertheless I do not believe they are the same bird, nor that *pulpa* can represent an immature plumage of *williamsi*, for *williamsi* has a stronger bill, legs, feet and hind claw: the under wing-coverts are more rufous: the retrices are similar in shape to those of *cantillans*, not narrow as in *pulpa:* also, as far as can be judged on worn specimens, the mantle is more vinous and may be less patterned. They may also be ecologically distinct for *williamsi* is known only from Marsabit and the Didd Galgalla lava desert 36 miles to the north, while *pulpa* was collected in rather less arid country.

Conclusions

There is reason to regard *M. pulpa* (of which *candida* is a synonym) is specifically distinct from both *M. cantillans* and *M. williamsi* and it should provisionally be regarded as such until further field study and collecting provide adequate data on which to assess both the taxonomic and ecological status of the three larks.

TABLE OF MEASUREMENTS

(where published measurements differ from mine they are given in brackets).

	Wing		*Bill*		*Tail*	
	♂	♀	♂	♀	♂	♀
M. c. marginata 9♂ 6♀ (Abyssinia & Kenya)	77–81	75–78	14–15	13.5–15	46–50	46–49
M. williamsi 3♂ 1♀	84	83	15	15	52–55 (56)	50 (54)
M. pulpa						
type	85 (84)		14.5 (14)		54 (60.5)	
type of *candida*	81 + (80) (moult)		14 (13.5)		54 (55.5)	

A note on the Sand Crab (Ocopyde sp.) as a predator of birds in South Africa

by Derek M. Comins

Received 10th March, 1961

Captain Pitman (1957, 91) refers to two "kinds of crabs which have been seen to attack young birds and pick the skeletons clean, namely racing crabs or sand crabs, two species of which, *Ocypoda cordimana* and *O. ceratopthalmus* (sic) are common on East African shores".

A specimen of a sand crab (EL. 128 ♂, *O. ceratophthalmus* (Pallas)) was collected by Miss M. Courtenay-Latimer and Mr. G. G. Smith, of the East London Museum, at about 11 a.m. on the 17th May, 1953 at Mboynte (indicated as Embotyi on certain maps) near Lusikisiki on the Pondoland coast. The crab was found attempting to drag a dead female adult Cape Rock Thrush (*Monticola rupestris* (Vieillot)) into its burrow which was situated in beach sand just above high tide mark. The bird was not decomposed; it was skinned and prepared as a museum specimen that evening. The bird and crab now compose an exhibit on display at the East London Museum.

There is no proof that the sand crab had actually caught the Cape Rock Thrush. It should be noted that the Cape Rock Thrush is known to occur "right down to the seashore" at least in the southern Cape (McLachlan and Liversidge: 1957, 296) which indicates that the bird at Mboynte had not necessarily arrived *in situ* as tide drift. A well authenticated report of a sand crab having been observed to catch and kill a bird would be of great interest and worthy of publication. Barnard (1950, 87) gives the distribution of *O. ceratophthalmus* as "Mauritius, east coast of Africa to Red Sea, Indo-Pacific". Workers in these localities are urged to publish any observations of predation by sand crabs on birds.

Bibliography:
Barnard, K. H. 1950. "Descriptive Catalogue of South African Decaped Crustacea (Crabs and Shrimps)", *Ann. S. Afr. Mus.*
McLachlan, G. R. and Liversidge, R. 1957. *Roberts Birds of South Africa.*
Pitman, C. R. S. 1957. "Further notes on Aquatic Predators of Birds", *Bull. B.O.C.* 77, 6 (1957), 89.

Nile Crocodiles *Crocodylus niloticus versus* Spurwing Goose *Plectropterus gambensis*

by CHARLES R. S. PITMAN

Received 18th February, 1961

In the River Nile, in the Murchison Falls National Park in northern Uganda, a flightless (moulting) female spurwing goose took to the water on the approach of a boat. Immediately, a crocodile already in shallow water made for the bird at speed, swimming on the surface with the head just showing. The bird saw the crocodile's approach and started to flap along the surface. Other crocodiles began to converge on the goose from all directions. The crocodile's swimming speed at the surface was faster than the goose and each time one closed with her she dived, changed direction under water and surfaced some twenty yards away. When she re-surfaced the crocodiles were slow to see her, but when they did so, immediately they started to close in again. Eventually there were eight crocodiles hunting her. One crocodile managed to approach close and then dived, only to surface again immediately behind the bird, which too had dived, just in time, and eluded its pursuer under water. Usually the goose dived when a crocodile had closed to within fifteen or twenty yards, and the crocodile then did not bother to dive. Finally, the goose made its way to deep water in mid stream and the crocodiles gave up the chase. Their reluctance to continue may have been influenced by the proximity of the boat.

XIII Congressus Internationalis Ornithologicus

The Thirteenth International Ornithological Congress will convene at Cornell University, Ithaca, New York, from 17th to 24th June, 1962.

The official announcement and application for membership in the Congress are now ready for distribution. Interested persons who have not already done so should send their names and addresses to the Secretary General *as soon as possible*.

A small fund has been obtained to provide partial support for the travel of a few persons coming from outside North America. Application forms will be sent to persons requesting them. (Citizens of the United States and Canada are not eligible.)

All applications for membership, travel grants and places on the programme should be returned to the Secretary General *before* 1*st December*, 1961.

Charles G. Sibley, Secretary General
Fernow Hall, Cornell University
Ithaca, New York, U.S.A.

1 SEP 1961
PURCHASE

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Dr. J. G. Harrison, "Merriewood", Sevenoaks, Kent. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

Proofs must be returned without delay. No changes may be made at this stage, other than corrections. At the discretion of the Editor, the Club will pay for a reasonable number of monochrome blocks, which the contributor may retain for his own use.

Contributors are entitled to a maximum of fifty free copies of the *Bulletin*, supplied only as specifically requested by authors. Those contributing to a meeting should hand in their MS. at that meeting; otherwise a note will be inserted mentioning the contribution.

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Applications for back numbers which cost 4*s*. each, should be made to N. J. P. Wadley, 58 Ovington Street, London, S.W.3. Members who have back numbers of the *Bulletin*, which they no longer require are requested to send them to N. J. P. Wadley.

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CORRESPONDENCE

Other correspondence should be addressed to the Hon. Secretary, Miss E. Forster, The Double House, Wiveton, Holt, Norfolk.

DINNERS AND MEETINGS FOR 1961

19th September, 17th October, 21st November, 19th December.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Edited by
DR. JEFFERY HARRISON

4 OCT 1961
PURCHASED

Volume 81
No. 7

October
1961

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

BRITISH MUSEUM NATURAL HISTORY

Volume 81
Number 7
Published: 2nd October, 1961

4 OCT 1961
PURCHASED

The five hundred and ninety-first meeting of the Club was held at the Rembrandt Hotel, S.W.7, at 6.45 p.m. on Tuesday, 19th September, 1961.

Chairman: Mrs. B. P. HALL,

Members present, 21; Temporary Associates (Overseas), 1; Guests, 12; Total, 34.

Special General Meeting

In accordance with the notice circulated previously, a special general meeting was held immediately following the dinner at which the following resolution, proposed by Mr. C. W. Mackworth-Praed and seconded by Mr. C. J. O. Harrison was carried:—

Rule 4.

The following to be added to the third paragraph:— "A Member who has had an unbroken membership of the Club for fifty years, shall become a Life Member, and shall not be required to pay any further Annual Subscriptions."

At the conclusion of the special general meeting, the monthly meeting continued as usual. Mrs. Hall pointed out that she thought that tonight was the first occasion on which a Club meeting had been presided over by a Madam Chairman, an announcement which was greeted with warm approval.

The behaviour of Sea Ducklings

Dr. P. M. Driver then gave a most excellent talk on this subject, a summary of which follows:—

During the summers of 1958 and 1959 observations were made on the behaviour of Eider ducklings in the Ungava Bay and Hudson's Bay regions of northern Canada. Detailed studies were made of Eiders, *Somateria mollissima*, from shortly before hatching until fledging, ten birds being imprinted to the investigator. Many other wild Eiders were watched for purposes of comparison, and also three imprinted Red-breasted Merganser ducklings, *Mergus serrator*, and two broods of wild Long-tailed Ducklings, *Clangula hyemalis*.

Emergence from the shell is conclusively shown to involve the agency of the egg-tooth, which is brought into contact with the inner surface of the shell by means of an 'upward nod'. This movement later takes on other important functions, being used in drinking, in brooding under the female in the 'greeting ceremony' and in adult displays.

Vocalisations begin before the duckling has hatched, when they are rather nondescript. After emergence the Eider duckling has a vocabulary of six discrete innate acoustic signals: the distress call, the complaint, the cohesion call, the contentment call, the brooding note, and the investigatory note.

A rich supply of invertebrate food, such as mosquitoes and aquatic Crustacea, is present at the time of hatching, and the ducklings' feeding mechanisms develop rapidly. To begin with the duckling shows an innate interest in any 'potential food object', that is, anything small or dark or moving, or with any combination of these characters. By experience the duckling soon learns that some of these objects are edible and others are not, and it thus comes to concentrate on the small invertebrates. It is assisted in the development of feeding on aquatic organisms by an innate 'under water search' in which the head is partially submerged with the eyes beneath the surface but the external auditory meatus above. The bird can thus see its prey and hear acoustic signals at the same time.

As soon as the duckling reaches water after hatching it is able to crash dive, but a 'juvenile feeding dive' takes two or three days to develop fully. This involves an acrobatic leap from the water and re-entry head first, but it is replaced by a less agile 'adult feeding dive' as the bird fledges.

The mechanism of attraction to the female upon hatching is named the 'brooding reflex'. This involves a positive response to the feeling of contact around the head—as when the duckling pushes up into the female's feathers—resulting in quiescence of the duckling. It is suggested that the 'brooding reflex' may be of fundamental importance to proper imprinting.

On the races of the Stonechat occurring in the Cape Province, South Africa, with the description of a new form

by M. Courtenay-Latimer

Received 23rd December, 1960

The present arrangement of the South African populations of the Stonechat *Saxicola torquata* (Linnaeus) into two races (*S. t. torquata* (Linnaeus), 1766: Cape of Good Hope, and *S. t. caffra* (Keyserling and Blasius), 1840: Uitenhage, eastern Cape Province) rests on the pioneer work of Sclater, *Ibis*, 1911, pp. 409–410. Later revisers, namely, Meinertzhagen, *Ibis*, 1922, pp. 20–29; Sclater, *Syst. Av. Aethiop.*, part ii, 1930, p. 467; Bowen, *Proc. Acad. Nat. Sci. Phil.*, vol. lxxxiii, 1931, pp. 7–9; Roberts, *Birds of South Africa*, 1940, p. 240, Vincent, *Check List Birds of South Africa*, 1952, p. 73; and McLachlan and Liversidge, *Roberts' Birds of South Africa*, 1957, pp. 306–307, all follow Sclater's original work closely, though Bowen and Roberts admit a third race (*S. t. stonei* Bowen, 1931: Villa General Machado, Angola) from the drier interior of South Africa.

Study of the pertinent literature reveals that the respective ranges of *S. t. torquata* and *S. t. caffra* have never been accurately determined by workers. Sclater (1911) gives the range of the "western" race (*S. t. torquata*) as "from Namaqualand and the Cape Town neighbourhood", while some later workers, notably Roberts (1940), Vincent (1952) and McLachlan and Liversidge (1957), admit a much more extensive distribution, which is generally given as the "western and southern Cape Province". I have recently studied a comprehensive series of this small chat from various localities in the south-western, southern and eastern Cape Province, with results which do not support the present subspecific arrangement of the populations in the Cape Province of South Africa.

S. t. torquata is supposedly different to *S. t. caffra* in having the flanks largely white in the breeding male, which parts are variably overlaid with hazel brown in the latter subspecies, while the female has the throat whitish and the lower breast and abdomen white and not buffish as in *S. t. caffra*. Careful study of specimens of both sexes from localities in the south-west Cape (topotypes) (Cape Flats, Muizenberg, Bellville, Malmesbury, Somerset West, Citrusdal, Tulbagh, Clanwilliam, Calvinia, Swellendam, Grootvadersbosch (Swellendam, etc.) and other parts of the Union, reveals that the topotypical populations of the nominate race do not have the characters generally attributed to them. Furthermore, I cannot discern the slightest valid subspecific difference between the populations breeding in the south-western Cape Province and those of the coastal areas of the southern and eastern Cape, Natal and Zululand. Indeed, birds from the south-western Cape can be matched exactly by examples in a precisely similar condition of plumage from as far afield as coastal Pondoland, Natal, eastern Swaziland (Big Bend) and southern Portuguese East Africa (wintering birds). Bowen, *loc. cit.*, also noticed that in a series of six specimens of *S. t. torquata* available to him from the Cape of Good Hope some of the specimens did not seem typical of the race (as defined by Meinertzhagen, following Sclater).

Muscicapa torquata Linnaeus, 1766, is based on the "Gobe-mouche a collier du Cap de Bonne Espérance" of Brisson, and on the finding that eastern Cape Province and Natal birds are the same as those of the south-western Cape, *Pratincola robusta* Tristram, 1870, *Pratincola caffra* Keyserling and Blasius, 1840, and *Pratincola torquata orientalis* Sclater, 1911, are all now placed as synonyms of the first named. *Pratincola pastor* Strickland, 1844, based on a Levaillant reference, is also a synonym of *M. torquata*. In the light of these decisions, it becomes necessary to return to the original work of Sclater (1911) in order to determine on what material his so-called "western" race was founded. Reference to this work shows that Sclater had ten breeding birds from Port Nolloth, Little Namaqualand, collected by Claude Grant in July and August, 1903, and four from Durban Road (Durbanville), near Cape Town, taken in March and September in the same year by Grant. Other specimens in the British Museum (Nat. Hist.), London, also used by Sclater, came from Kugelfontein and Komaggas, Little Namaqualand, and from Cape Town. From this information it can be deduced with reasonable assurance that the characters given by Sclater for the "western", race of the Stonechat were based largely on or influenced by a preponderance of material from Little Namaqualand. This point is very important, because I now find that the Little Namaqualand series before me from Strandfontein, Garies, Kamieskroon, Wallekraal, Port Nolloth and Alexander Bay, at the mouth of the Orange River, shows the characters generally ascribed by workers to the nominate race in having the hazel brown on the ventral surface of the male restricted in breeding birds to the middle and the sides of the breast; the females with whitish throats and sharply demarcated white over the lower breast and abdomen. This very distinctively marked race appears to be largely restricted to the dunes and sea-fog region of western Little Namaqualand—a region already well-known for its number of endemic races, most of which tend to be greyer or whiter than their congeners from further east or south. The characters of the Little Namaqualand Stonechat are in keeping with this general trend of variation in western Cape bird forms.

Now that the topotypical populations of *S. t. torquata* have been shown to be the same as the *S. t. caffra* of authors, the *S. t. torquata* of Sclater and subsequent workers, as understood on the basis of Little Namaqualand birds, will require to be given a name. I propose:

Saxicola torquata clanceyi, subsp. nov.

Type: ♂, adult. Wallekraal, western Little Namaqualand, north-western Cape Province (30° 21′ S., 17° 27′ E.). 8th August, 1960. Collected by E. Hayden. In the collection of the East London Museum. E. L. Mus. No. 8291.

Description: Similar to *S. t. torquata* (Linnaeus), 1766, of the south-western and eastern Cape, Natal and Zululand, from which it differs as follows: *Adult male* in breeding plumage with the hazel brown of the ventral surface restricted to the median surface and the adjacent sides of the breast, thereby exhibiting much more white laterally. Pure white extends from the sides of the neck and the edges of the breast down the sides of the body and over flanks, mid- and lower- breast, abdomen, crissum and under tail-coverts. *Adult female:* differs from that of *S. t. torquata* in having the throat whiter (when worn usually showing a lot of basal black over the lower throat), not buffy, and with the lower breast abdomen, caudad surfaces of the flanks, crissum and under tail-coverts white, not buffy. Also rather greyer and less warmly coloured on the upper-parts. Distinctions best marked in the breeding dress. Similar in size.

Paratypical material: 11 ♂♂, 2 ♀♀. All from the following localities in western Little Namaqualand: Wallekraal, 3 ♂♂, 2 ♀♀; 20 miles S.W. of Garies, 1 ♂; Garies, 1 ♂; Strandfontein, 1 ♂; near Kamieskroon, 1 ♂; Port Nolloth, 3 ♂♂; Alexander Bay, 1 ♂. Also examined—a long series of *S. t. torquata*, and series of *S. t. stonei* and *S. t. oreobates* Clancey, 1956, described from Basutoland.

Range: The dune area of western Little Namaqualand from about the mouth of the Orange River (Alexander Bay), to just south of the mouth of the Olifants River (Strandfontein), south of which it intergrades with *S. t. torquata* (A series of breeding birds from Clanwilliam shows this intergradation clearly).

Measurements of the Type: Wing 71.5, culmen 17, tarsus 22.5, tail 52 mm.

Remarks: I name this new race in honour of Mr. P. A. Clancey, Director of the Durban Muesum, in recognition of his help in elucidating the taxonomy of the Cape Stonechats and the vast amount of work he has done to help ornithology in southern Africa.

Apart from *S. t. torquata* and *S. t. clanceyi*, two other races of this species occur within the political limits of the Cape Province. The two taxa just mentioned are actually coastal in their distribution, while in the interior of the Cape Province rather paler birds occur. Breeding males in a series in the East London Museum from the drier interior of the eastern Cape (mainly Albany division) are distinctly lighter and more yellowish, more cinnamon coloured, over the breast, sides of the body and flanks than in *S. t. torquata* of the coastal strip, while the central portion of the lower breast, the abdomen, crissum and under tail-coverts are buffy white, not pure white, thereby presenting a less strongly contrasted chromatic effect over the median ventral surface. Mr. Clancey has kindly compared these specimens at my request with material in the Durban Museum, and has pronounced them as applicable to *S. t. stonei*, which race ranges from Angola and Northern Rhodesia, southwards in the interior of south-central Africa to the northern and eastern Cape Province, Orange Free State, the Transvaal and most of Southern Rhodesia. As Stonechats are given to much seasonal movement, further collecting of breeding birds will be necessary in order to clear up the precise distributions of *S. t. torquata* and *S. t. stonei* in the eastern Cape Province.

S. t. oreobates also occurs within the limits of the Cape Province, the East London Museum collection possessing two females of this race from localities in the north of the eastern parts of the province from localities in the mountains lying adjacent to Basutoland. Males of *S. t. oreobates* resemble *S. t. stonei* over the abdominal surface, but are much darker and more saturated. The racial distinctions are, however, better marked in the female, which is a more vinaceous grey, less buff, on the upper-parts than in either *S. t. torguata* or *S. t. stonei*, and on the under-parts the throat is distinctly darker and the rest of the ventral surface more vinaceous tinged. It is a restricted montane race, occurring in two widely separated regions, namely, the highlands of Basutoland and the eastern highlands of Southern Rhodesia.

Acknowledgments

For the loan of camparative material I am grateful to the Directors of the following museums: South African Museum, Cape Town; Durban Museum; and the Transvaal Museum, Pretoria.

I am deeply grateful to Mr. P. A. Clancey, of the Durban Museum, for his help and guidance in the preparation of this report and for effecting certain critical comparisons for me.

To Mr. G. G. Smith I extend gratitude for making possible the collection of the valuable series of ornithological material in this Museum.

Notes on African Thrushes

PART ONE

by C. M. N. White

Received 15th January, 1961

The present series of notes arise, from the preparation of a revised check list of the African *Turdinae*. As with most other Passerine groups of any size a simple linear sequence of the genera is impracticable, but genera may be arranged in groups of apparently closely related genera. This raises in varying degrees the question of what genera should be recognised. The present note deals with an assemblage of Turdine genera which may conveniently be termed the charts and wheateas.

The genera recognised by Sclater (1930) which comprise this group are *Saxicola*, *Myrmecocichla*, *Thamnolaea*, *Pentholaea*, *Pinarochroa*, *Karrucincla*, *Emarginata*, *Cercomela*, *Oenanthe*. Ripley (Postilla, no. 13, 1952) proposed to add to it *Chaetops*. These genera are of very unequal value, and only three or four of them can be accepted without reserve. Two of these which may be admitted without further discussion are *Saxicola* and *Oenanthe*.

Cercomela was originally used for certain rather small brownish species found in dry areas of the Middle East, N.E. Africa and the southern edge of the Sahara (*melanura*, *scotocerca* and *dubia*). Structurally they are very like *Oenanthe* but lack the boldly patterned tail and plumage, live inside bushes to a greater extent and have a distinctive ethological character in that they frequently open their tails in a fanwise manner. Since 1926 it has been usual to include also *familiaris* in *Cercomela*. In 1950 I pointed out that the monotypic *Emarginata* was so closely related to *familiaris* that the two species should be included in the same genus. In 1957 Macdonald pointed out that *Karrucincla schlegelii* and "*Oenanthe*" *tractrac* were so closely related that they should be placed in the same genus although *Oenanthe* might not be the correct genus for them. Ripley had in 1952 recognised *Emarginata* with *Karrucincla* as a synonym, an unnatural arrangement apparently based on the emargination of the primaries which is clearly not a good generic character and occurs also in *tractrac*. In 1958 the S.A.O.S. List Committee proposed that *Oenanthe tractrac*, *Karrucincla schlegelii* and *Emarginata sinuata* all be included in *Cercomela*.

Cercomela as thus enlarged becomes more difficult to separate from *Oenanthe* than the *Cercomela* of *Sclater*. Pattern ceases to be a very good guide for the tail pattern of *tractrac* is like that found in *Oenanthe*, whilst *schlegelii* was found by Macdonald to frequent the tops of bushes like a *Saxicola* although it twinkled its wings like *C. familiaris*. *Cercomela* in its present form comprises a rather varied group of species, and although I retain it in its enlarged form, I believe that it virtually merges into *Oenanthe* and the distinction between these genera is rather an artificial matter of convenience. Ripley (1952) proposed to merge *Pinarochroa* with *Cercomela;* Goodwin (1957) preferred to retain *Pinarochroa* on the ground that it was as close to *Oenanthe* as to *Cercomela*. If *tractrac* and *schlegelii* were kept in *Oenanthe*, I would include *Pinarochroa* there too on account of its tail pattern, but with these two species assigned to *Cercomela*, there can be little ground for claiming that *Pinarochroa* is more like *Oenanthe*, especially as *Cercomela* and *Oenanthe* virtually merge into each other. Consequently I consider that *Pinarochroa* should be included in *Cercomela*.

Myrmecocichla, *Thamnolaea* and *Pentholaea* form a closely related group of chats typified by most often having black plumage in at least males, with varying development of white on the head and wing. *Pentholaea* consists of two rather small species; they do not really show any differences from *Myrmecocichla* apart from their small size. *Thamnolaea* as usually accepted contains two species. The chestnut on the abdomen in males seems to be the only character by which they differ from *Myrmecocichla. T. cinnamomeiventris* is associated with rocky hills but the other species *T. semirufa* occurs on open grasslands like some species of *Myrmecocichla.* A further peculiarity of *Cinnamomeiventris* is its habit of nesting in old nests of swallows. The habitat peculiarity of *cinnamomeiventris* among rocks is paralleled by that of *Pentholaea melaena* which is found among rocky ravines although the other *Pentholaea* frequents open savanna woods. The differences between these three genera of black chats are thus very unsatisfactory; two of the three genera only contain two species each and their characters are specific rather than generic. Mr. C. W. Benson who has had field experience of all three genera agrees with me that there is no good ground for separating *Thamnolaea* and *Myrmecocichla*, and no obvious reason for not also uniting *Pentholaea* with them. I propose to do so. *Thamnolaea* and *Myrmecocichla* were described by Cabanis at the same time in 1850, but without designating any types of the genera. This was done by Gray in 1855 in Cat. Gen. Subgen. Bds. He designated a type for *Myrmecocichla* on p. 35 and for *Thamnolaea* on p. 36. I therefore select *Myrmecocichla* as the name under which to place these black chats.

Ripley (1952) places *Chaetops* between *Thamnolaea* and *Myrmecocichla* in his arrangement. He gives no reason for this, and *Chaetops* with its graduated white tipped tail and peculiar pattern does not appear to belong in this group of the *Turdinae*. The genera of the chats and wheatears found in Africa can thus be reduced from Sclater's 9 to 4, viz. *Saxicola*, *Oenanthe*, *Cercomela* and *Myrmecocichla.*

A second group of genera occuring in the Ethiopian region may be touched upon in conclusion: these are *Phoenicurus* (migrant only) and *Monticola.* I agree with those ornithologists who regard these as probably related genera, The status of neither is disputed, and they may be regarded as forming a self contained group.

The Significance of some Plumage Phases of the House-Sparrow, *Passer domesticus* (Linnaeus) and the Spanish Sparrow *Passer hispaniolensis* Temminck*

PART TWO

by JAMES M. HARRISON

Received 2nd January, 1961

V. INTERSEXES

As some of the secondary sexual characters are anomalous in full juveniles of *P. domesticus* it will be found impossible to assign any individual, which could not be anatomically sexed, with any degree of confidence to its correct sex.

But the real anomalous intersexes have occurred in birds in their first winter plumage.

Hartert (⁶) in *Vög. pal. Fauna* described as species No. 251 *Passer*

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*A Summary of this paper was read at the British Ornithologists' Union York Conference on 25th March, 1961.

enigmaticus, a House-Sparrow collected by Sarudny (7) in Baluchistan in 1903.

As this so-called species was from its original description a complete enigma Professor Mayr (8) and Dr. Charles Vaurie scrutinised the Koelz collections of *Passer domesticus* from Persia, Afghanistan and various parts of India, in all about 350 specimens. In the series examined they "found two kinds of specimens that show indication of intermediacy between male and female plumage".

Amongst the first year males in rather female dress in the Koetz collections there were four specimens, while amongst the adult females there were six showing a degree of maleness. They comment that "It is thus evident that specimens of both sexes occur in Western Asiatic House-Sparrow populations that are somewhat intermediate between the typical male and female plumage". Mayr (*loc. cit.*) states "Although no male was found without a dark throat patch, as the type of *P. enigmaticus* the available evidence suggests that the types of *enigmaticus* are intersexes of *P. domesticus*. (See Plates V and VI).

As it is known that the only secondary sexual character in *P. domesticus* which is under hormonal control is the bill colour of the male in summer a fact experimentally established by Keck (9) the assumption of the black throat by females of the species invests this character with genetic, and therefore *pari. passu* phylogenetic significance. This represents in all probability an evolutionary pointer back to *P. hispaniolensis* for, as has already been shown, in the latter species both sexes can normally have this character. In the more mature plumages of the male the black throat and gorget are invariably present and in the same plumages of the female it is by no means unusual to see a dark throat patch. (See Plate VII).

The writer has two or three such specimens of *P. domesticus*, amongst them an adult female taken in the breeding season in the British Isles which shows this character to an equal extent as is found in some female examples of *P. hispaniolensis*, while Nichols (*loc. cit.*) refers to "an aberrant bird which was banded on 13th May 1930" and recovered on 14th May 1932, i.e. "at least three years old when it had a dark throat patch faintly indicated". The ovary was said to be moderate, but not in breeding condition.

Such cases, it would seem, must be regarded as genetic intersexes, essentially mutational and therefore important phylogenetically. In *P. domesticus* females such cases are to be regarded as very rare.

Mayr (*loc. cit.*) states "Nothing since has been heard of this 'enigmatic species' (as Hartert had called it) except that Sarudny and Härms (10) gave some additional details of the capture of the only two known specimens".

To the intersexes listed by Mayr (*loc. cit.*) can now be added the following:—

♂ 8th April 1881 Candahar, Afghanistan.
Swinhoe Coll. B.M. Register No. 81. 12.1.153.
♀ 23rd Sept. 1907 50 miles west of Samarkand, Turkestan.
Carruthers Coll. B.M. Register No. 1909. 10.26.444.
♀ 23rd Sept. 1907 50 miles west of Samarkand, Turkestan.
Carruthers Coll. B.M. Register No. 1909. 10.26.522.

♀ 18th Oct. 1954 Habbaniya, Iraq. B.148.
Collected by Jeffery G. Harrison.
In coll. James M. Harrison.

It is known that with transient endocrine imbalance the secondary sexual characters in some species, notably in *Gallus domesticus*, *Phasianus colchicus* and some of the Anatidae, a swing in these characters towards or away from one or the other sex may result. But as already stated this basis cannot be accepted as responsible for such cases in *P. domesticus* and Mayr (*loc. cit.*) comments in this connection, "Rather, it seems probable that most of the sexual dimorphism is genetically fixed in the feather papillae".

We know that an appearance of pseudo-feminisation can result from an imbalance of the thyroid secretion. This has been produced experimentally by Zawadowsky (11) and his colleagues and has been recorded in the wild

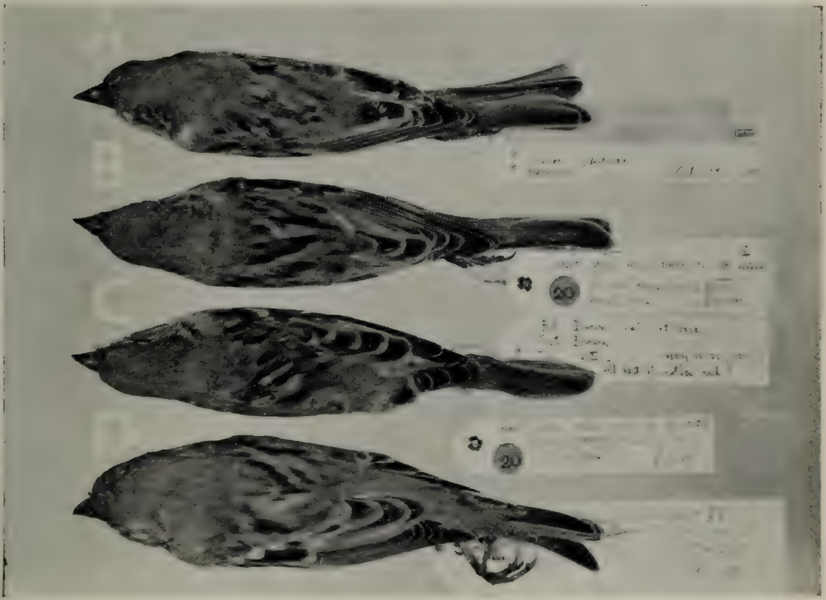

Plate V

PLATES V. AND VI. Intersexes of *Passer domesticus* (Linnaeus) *Passer* "*enigmaticus*".

A. Male, *Passer domesticus indicus* Jardine and Selby. 14th October, 1937. Kalat i Ghilzai, Afghanistan. Koelz Collection, American Museum of Natural History, No. 467226.

B. Female, *Passer domesticus indicus* Jardine and Selby. 23rd September, 1907. 50 miles west of Samarkand, Turkestan, 1,500 feet. Carruthers Collection. Brit. Mus. Reg. No. 1909. 10. 26, 4444.

C. Female, date and locality as B, Carruthers Collection. Brit. Mus. Reg. No. 1909. 10. 26. 522. Both specimens in the Collections of the British Museum, (Natural History).

D. Female, *Passer domesticus biblicus* Hartert. 18th October, 1954, Habbaniya, Iraq. Collected by Jeffery G. Harrison. No. B. 148. Collection James M. Harrison.

Note to the above specimens of intersexes can be added a further example in the British Museum series:—

Male, *Passer domesticus indicus* Jardine and Selby. 18th April, 1881 Candahar, Afghanistan. Swinhoe Collection. Brit. Mus. Reg. No. 81-12. 1. 153.

state (Harrison ([12]) 1961) so the aetiology of the intersexes in *P. domesticus* is possibly complex. Undoubtedly the genetic basis is the primary factor while the possibility arises of some other factor as yet to be determined which might affect the reaction of the feather papillae.

VI. DISCUSSION

It is evident that a close study of aberrant and homologous characters in birds is desirable, and that particular attention should be given to the juvenile and subadult plumages.

The complexity of all such cases is emphasised by the present study into this subject in *Passer domesticus*, for here recent research has eliminated very largely any question of hormonal influence and has focused attention on heredity and on the genetic potential of the feather papillae which, it is suggested, may be held responsible for the sexual dimorphism—where sexual dimorphism is under hormonal control histological investigation gives the complete answer in any anomalies.

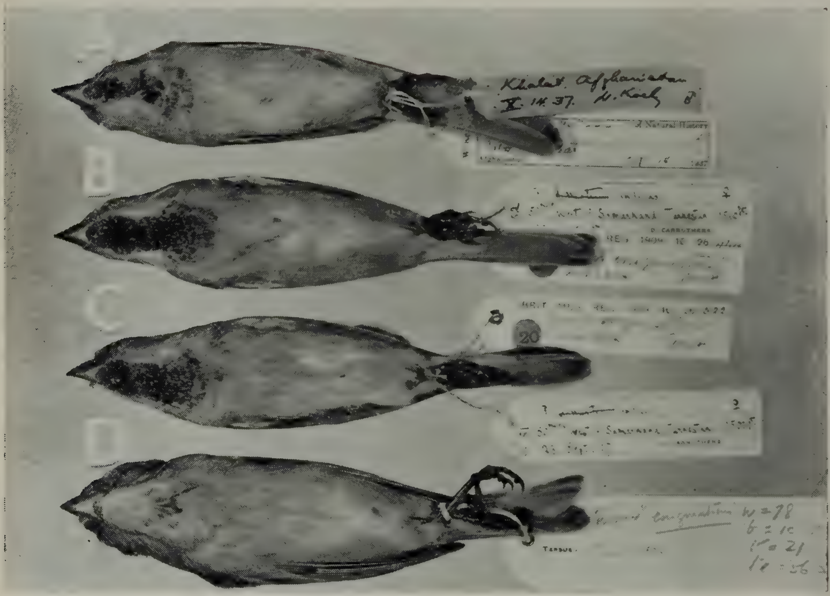

Plate VI

In further recent studies stemming from the work of Stresemann ([13]) into the anomalous plumages of certain species, e.g. *Phoenicurus ochrurus*, *Muscicapa hypoleuca*, *M. albicollis*, *Sylvia atricapilla* and *S. communis*, he coined for such the term ''Hemmungskleid'', for which Mayr ([14]) later suggested the term ''retarded'' plumage, where the male of a species in definitive plumage shows two different types, one of which resembles the immature or female dress. Nichols (*loc. cit.*) refers to his type–B juvenile in *P. domesticus* as foreshadowing the male plumage. He further suggested that they might be called ''a juvenal with progressive plumage''. This seems to the writer inappropriate in that the subjects concerned are *full* juveniles and that Stresemann's "Fortsschritskleid", Mayr's "Progressive" plumage, refer to birds which have passed the post-juvenile moult and might therefore even be breeding birds; in fact Mayr (*loc. cit.*) comments "such plumages may also occur in adult birds: namely, "retarded" plumages in adult males and "progressive" plumages in adult females". Therefore in the use of the above terms the operative condition is the implied breeding of the individual.

The dusky throat patch in *P. domesticus* juveniles while affording a clue to the sex of the individual is, in the writer's opinion, of far greater significance as a phylogenetic expression for the reasons already advanced (*vide supra*).

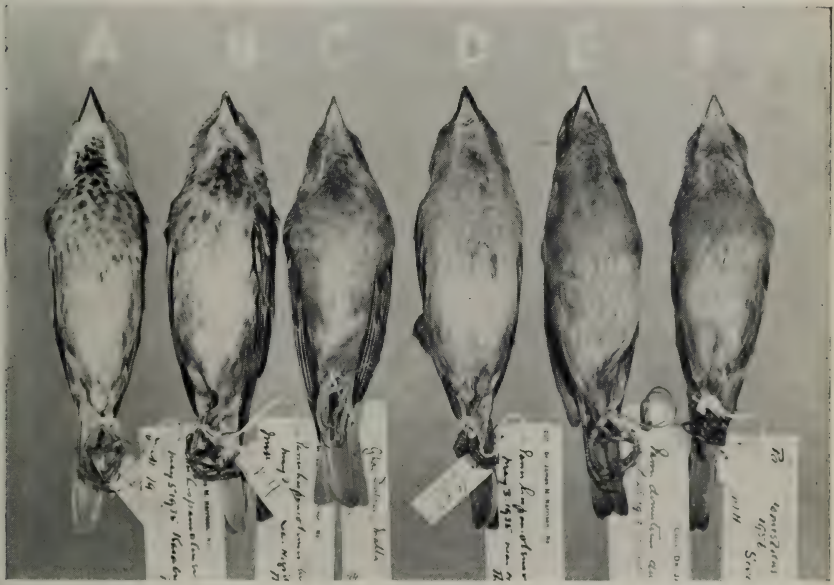

Plate VII

PLATE VII. Overlap of characters in females of *Passer domesticus domesticus* (Linnaeus) and *Passer hispaniolensis hispaniolensis* Temminck. A. B. and D. *Passer hispaniolensis hispaniolensis* Temminck, Thrace. Collection of James M. Harrison.

C. *Passer hispaniolensis hispaniolensis* Temminck, Malta. Collection W. H. Payn.

E. *Passer domesticus domesticus* (Linnaeus). Breeding adult British Isles. Collection James M. Harrison.

F. *Passer domesticus domesticus* (Linnaeus). Full juvenile female showing dusky throat patch and "ghost" *hispaniolensis* pattern of breast and flanks, British Isles. Collection James M. Harrison.

VII. SUMMARY

This paper describes certain plumages in the House-Sparrow, *Passer domesticus* (Linnaeus) and relates these phylogenetically to the Spanish Sparrow, *Passer hispaniolensis* (Temminck).

The implications drawn from the study of certain races and intersexes of *P. domesticus*, and their bearing on the question of Phylogeny are discussed in the light of recent relevant research.

The occurrence of certain homologous recurring characters both in the juvenile and later stages of *P. domesticus* lends strong support to the explanation of such as reversionary atavistic phenomena.

The value of the study of juvenile and immature plumages is stressed, as calculated to advance the knowledge of avian phylogeny and affinity.

Acknowledgments

Grateful acknowledgments are made to the following for the presentation or loan of specimens, or other valuable assistance, and particularly to Mr. J. D. Macdonald for suggesting that I should undertake this research:—

Dr. Jeffery G. Harrison, Mr. Haim Hovel, Mr. J. D. Macdonald, Professor Ernst Mayr, Professor H. Mendelssohn, Mr. A. G. Parsons, Major W. H. Payn, Mr. J. D. Summers-Smith, Mr. F. C. Sawyer, Miss G. M. Thomas and Dr. Charles Vaurie for the loan of a specimen from the Koelz Collection in the American Museum of Natural History.

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The anomaly of the Rough-wing Swallows of the *Psalidoprocne holomelaena—orientalis* group of races

by MICHAEL P. STUART IRWIN

Received 28th January, 1961

White (1961: *Bull. B.O.C.* 81; pp. 29-33) in his recent review of the interspecific relationships of the species of *Psalidoprocne* lumped the various populations of *Psalidoprocne holomelaena* and *Psalidoprocne orientalis* occurring in Eastern, Central and South Africa, at the same time merging into this enlarged species, an assemblage of largely allopatric and monotypic or near monotypic forms, thus greatly reducing the number of species. Pending a greater understanding of the evolutionary history of the genus and this group in particular, this step appears eminently satisfactory, though additional researches may necessitate some future modification.

In discussing the apparent mutually exclusive distribution of those forms possessing either grey or white under wing coverts (*reichenowi* and *orientalis*), and those that are wholly black (*holomelaena*); living in East, Central and South Africa, it is shown that these two easily distinguishable groups are, (allowing for apparent off-season wanderings) always allopatric to one another as far as the breeding populations are concerned. *Holomelaena* is shown by White to consist of two geographically distant populations living in South and East Africa, the latter populations ranging across to the eastern Belgian Congo. The intervening area from central Tanganyika Territory to Southern Rhodesia and adjacent Portuguese East Africa being occupied by *orientalis* populations. (Note that the supposed occurrence of *holomelaena* in the Matengo Highlands of south-western Tanganyika Territory as reported by Sassi and Zimmer (1941 : 316–317) in an area otherwise known to be inhabited by *orientalis* populations, is almost certainly an error, as it is wholly based on visual evidence).

Since the appearance of White's review, the existence of a further isolated population of *holomelaena*-like birds has been brought to light in Southern Rhodesia. The first report of the existence of all-black rough-wings in this territory was made by Priest (1935 : 321), but has been subsequently generally ignored. This author reported collecting two birds, an adult and a juvenile at Zimbabwe, in the Midlands in 1932. However, when compiling the *Check List of the Birds of Southern Rhodesia*, Smithers *et al.* (1957 : 130) did not then accept its occurrence for lack of material evidence, as Priest's skins could not be traced. On the other hand, several reliable observers subsequently reported it on the basis of visual evidence in that area. In view of this and the original record by Priest, a few days were spent in early November, in the Bikita Native Reserve, just south of Bikita at about 3,400 ft. a.s.l. at approximately 20° 06′ S., 31° 37′ E., this is some 45 miles east of Zimbabwe, but in country even more ecologically suitable for the occurrence of rough-wings.

Collecting activities centred along a small perennial stream running through rich *Brachystegia* woodland, and within an hour of arrival the first pair of rough-wings were spotted flying lazily upstream, level with the tops of the trees. On the following morning a party of about eight were noticed flying about over a closely cropped sward dotted with dead trees, on the same stream, just below a strip of retreating forest. Henceforth they were observed on numerous occasions, but were invariably on the move either upstream or downstream, flying at about tree height. Under such conditions they were not easy to collect, but finally on the 7th, a pair were obtained as they were about to go to roost in a sandy bank on the same stream, where they had been noted at the same time on the previous evening. Both proved to be fully adult, one being a male with slightly enlarged testes and the other a female with ovaries undeveloped.

The general habitat in which they occurred was one of rich *Brachystegia* woodland bisected by forested or semi-forested water courses, otherwise lined with *Syzygium* trees, or flanked by *Brachystegia*. Due to its topographical position the whole region is one of locally high precipitation, ranging on the average of between 40 and 50 inches of rainfall per annum, and this in turn is reflected by the richness of the vegetation and through the continued existence of isolated patches of montane evergreen forest in sheltered positions on the higher hills. Botanically the region shows a marked phytogeographical affinity with eastern Southern Rhodesia; forming, as demonstrated by Wild (1956: 53–62), part of an east-west extension of the Inyangani Subcentre, but isolated from similar such areas by tracts of drier country. In addition to other designated areas to the west, this particular region is termed the Bikita extension. Likewise the Zimbabwe area is similarly constituted, both forming extensions 2 and 3 of the same complex as given on the accompanying map. The entire Bikita-Zimbabwe region receives not less than 32 inches of rainfall per annum. It is therefore apparently over this tract of country between about 3,000—5,000 ft. a.s.l. that *holomelaena*-type birds are restricted.

The affinities of this isolated population of all black birds must now be considered in relation both to the other more distant populations of *holomelaena*-type birds occurring over a thousand miles to the north in Tanganyika and in coastal Portuguese East Africa 350 miles to the south-east, as well as to the geographically much nearer *orientalis* populations living less than 40 miles distant across the Sabi Valley. *Orientalis*-type birds are generally distributed along the eastern border of the territory, where they occur between 1,000 and 7,000 ft. a.s.l. living usually in close association with evergreen forest, though often too, found in *Brachystegia*. They also range locally, if only through sporadic wandering, as far west as Tsungwesi at 18° 48′ S., 32° 13′ E., and the Inyamapamberi River near Inyazura, (personal visual record and R. K. Brooke *in litt.*) and to Rusape, slightly to the north (A. N. B. Masterson, verbal comm.). They are also stated to occur on Wedza Mountain at 18° 45′ S., 31° 36′ E., (R. K. Brooke *in litt.*) and Priest also recorded them from thence, but resident populations are still not known definitely elsewhere in Mashonland to the west, though on visual evidence some form is stated to occur near Sinoia, but supporting evidence has never been forthcoming; and R. K. Brooke recorded a single wanderer in November, eleven miles N.N.E. of Salisbury. Otherwise the only physical barrier separating the two populations is the arid rain-shadow region of the Sabi Valley which must be largely ecologically unsuitable, but the barrier cannot by any means be complete as R. K. Brooke again informs me that he has seen *orientalis* at 1,450 ft. a.s.l. to the south of Birchenough Bridge along the Sabi River. Likewise *holomelaena* would be equally likely to wander down into the Sabi Valley.

A similar set of circumstances exists in Northern Rhodesia, where *orientalis* occurs generally east of the Luangwa Rift, though also known from the lower Munyamadzi River in the valley itself; but to the west on the plateau is replaced by the race *reichenowi*.

In analysing this distributional pattern it might at first seem that these more or less mutually exclusive populations would indicate the existence of strong interspecific competition and a general ecological incompatability, with *holomelaena* in part with a relict distribution. However, a relatively simple set of genetic factors may influence the occurrence and dominance of either the one type or the other; thus, until more is known about these swallows it seems preferable to follow White in regarding them as conspecific.

I have closely compared the various populations of *orientalis* and *holomelaena* and have been quite unable to detect any differences in colour gloss between one and the other, nor as in the case of *reichenowi*, is there any consistent size difference. White recognises the East African *suahelica* as being larger, but one South African specimen examined, with a wing of 118 mm., is only one mm., smaller than the largest East African specimen measured by White.

The following table of measurements which supplements that of White, is based on the adult material in the National Museum of Southern Rhodesia, plus a series of *holomelaena* kindly loaned by Mr. P. A. Clancey, Director of the Durban Museum and Art Gallery.

TABLE OF MEASUREMENTS

	holomelaena populations	
Eastern Cape, Natal and Northern Zululand	*wing* ♂♂	105, 106, 108, 111, 112, 112, 112, 118.
	♀	104.
	tail ♂♂	82, 82, 83, 86, 86, 88, 89, 92.
	♀	82.
Bikita, Southern	*wing* ♂	109, ♀ 98; *tail* ♂ 82, ♀ 69.
	orientalis populations	
Eastern Southern Rhodesia and adjacent Portuguese East Africa	*wing* ♂♂	104, 105, 106, 109, 109, 110, 112, 112, 113.
	♀♀	95, 97, 98, 99, 99.
	tail ♂♂	77, 79, 79, 79, 82, 83, 85, 86, 89.
	♀♀	65, 66, 68, 68, 69.

Though White fully discussed the distributional pattern of the various forms, attention should perhaps also be drawn to a further instance of different races approaching each other closely. This is provided by *ruwenzori*, the western representative of the all black *holomelaena*, which penetrates down the west side of Lake Tanganyika in the eastern Belgian Congo to Mount Kabobo at 5° 06′ S., 29° 01′ E., (Prigogine 1960: 38); and must therefore be closely approached by *reichenowi* which in turn is the western representative of *orientalis*, as this form occurs at Lubilu at 4° 40′ S., 27° 48′ E., (Schouteden 1955: 482). Here again different forms approach each other from widely separated geographical regions, further emphasising the rather complicated evolutionary history that this genus must have undergone in the past, preceding the establishment of the existing distributional pattern.

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On the polytypic variation of the Red-billed Oxpecker *Buphagus erythrorhynchus* (Stanley), with the characters of a new subspecies

by P. A. CLANCEY AND W. J. LAWSON

Received 17th January, 1961

The Red-billed Oxpecker *Buphagus erythrorhynchus* (Stanley), 1814: northern Abyssinia, is the more restricted in range of the two species of *Buphagus*, ranging from the southern Sudan, Uganda, the eastern borders of the Congo, Abyssinia, Eritrea and the Somalilands, southwards through eastern Africa to the Bechuanaland Protectorate, Southern Rhodesia, the Transvaal, Orange Free State, Swaziland, Natal and Zululand, and southern Portuguese East Africa. In many parts of its range, particularly in the south, it has been completely eradicated or sorely depleted in numbers through human agency in the form of game elimination and the mass dipping of cattle and other domestic stock. At the present time the populations of this species are arranged in two rather imperfectly understood subspecies, resulting from the original work of the German systematist, Hermann Grote (1927), who recognised two races: a pale northern form (*B. e. erythrorhynchus*) with a somewhat limited range, and another larger and darker one, *B. e. caffer* Grote, 1927: Palala River, Zoutpansberg, northern Transvaal, distributed from about the southern limits of the highlands of Kenya Colony south to the austral parts of the species' range. Grote's findings have been largely followed by later workers [see Sclater (1930); Sclater, in Jackson (1938); and Mackworth-Praed and Grant (1955)], though Chapin (1954) found the overlap in wing-measurements between the two taxa to be considerable and the differences in colour to be relatively slight, and was unwilling to accord recognition to *B. e. caffer*. Study of the variation is this species is complicated by the fact that considerable change is wrought in the colour of the feathers through the bleaching agency of the sun, series in museum collections from single localities are seldom extensive enough, while skins are extremely prone to rapid post-mortem cabinet colour change.

A direct comparison between recently taken material from the Transvaal (near topotypes of *B. e. caffer*) and specimens only a few years old from Abyssinia, Somaliland, and parts of Kenya Colony shows that *B. e.*

erythrorhynchus and topotypical *B. e. caffer* are only slightly differentiated in the colouration of the body plumage and scarcely at all in size. In topotypical *B. e. caffer* the wings of 10 ♂♀ measure 119–124 (121.3), and the tails 87–95 (91.0) mm., and the colour of the upper-parts is about Deep Greyish Olive/Hair Brown [Ridgway (1912) (pl. xlvi)], and the tail, when viewed ventrally, shows no suffusion of cinnamon, being wholly Hair Brown. In specimens of *B. e. erythrorhynchus* before us from Abyssinia, northern Kenya Colony and Somaliland the upper-parts are slightly lighter than in *B. e. caffer*, particularly over the head, the colour of the mantle being about Drab (pl. xlvi) or slightly greyer. On the under parts, the throat is rather paler than Drab (a greyish olive in *B. e. caffer*), the breast is rather less dusky, and the lower breast, abdomen and flanks are usually rather more suffused with warm buff, less whitish, than *B. e. caffer*, but the best racial character seems to be in the colouration of the rectrices, the series of *B. e. erythrorhynchus* before us having the under surfaces of the tails distinctly cinnamon tinged. In some of the better marked specimens the inner webs of the two outer pairs of rectrices exhibit a 4—6 mm. wide lateral band of Sayal Brown (pl. xxix), which feature does not occur in *B. e. caffer*, as understood on the basis of Transvaal topotypes in the Durban Museum collection.

While *B. e. erythrorhynchus* is not readily separable from *B. e. caffer* on the basis of size, some of the populations currently grouped in this taxon are indeed aggregates of much smaller sized birds than the latter race, particularly those of Somalia and adjacent coastal Kenya Colony. Three ♂♀ from Somalia (Iscia Baidoa; Mogadishu) have wings 108, 110, 110.5 (all rather worn), while a single example from Lamu, north-eastern Kenya Colony coast, has a wing of 113, and another one from M'koi a wing of 108 mm. The tails of these five birds measure 79–84 (82.6) mm. The Somali examples are also on the whole paler and more "desert-coloured" than any other specimens examined by us. The rumps are particularly pallid. In the high interior of Kenya Colony, Uganda and Abyssinia (highlands) the populations are composed of very much larger birds (wings of 11 ♂♀ 115–125.5 (118.4), tails 84.5–93 (87.5) mm. Chapin gives the wings of Abyssinian birds as 105–120 mm., but some of his specimens were obviously not from the highlands of that country, or else partially moulted birds still carrying juvenal remiges. It seems to us that *B. e. erythrorhynchus* auct., is a composite form of two quite well-marked subspecific taxa: a large-sized race of the elevated interior of north-eastern Africa with wings over 115 mm. in length, and a markedly smaller and rather paler one apparently more or less confined to the arid region of Somaliland and immediately adjacent areas in other territories. It is evident from a study of the pertinent literature that some workers have considered the latter populations to represent the nominate race, while the former are often placed along with the southern *B. e. caffer*—now seen to be incorrect in the light of the characters found to differentiate Transvaal topotypes of that race from the Abyssinian and Kenya Colony highland populations of the species. The question of allocating names to the two subspecies which comprise the taxon *B. e. erythrorhynchus* auct., will require to be held in abeyance pending the examination of much more extensive material from north-eastern Africa than presently available to us.

The northern limits of the range of *B. e. caffer* are not readily fixed on the basis of existing material, but two recently taken skins from the Kenya Colony highlands (South Kinangop; Lake Naivasha) collected by Mr. J. G. Williams seem to be intermediate between that race and the nominate one. Sclater, in Jackson, also observed that the birds of Kenya Colony and Uganda are often intermediate. *B. e. caffer* is now found to be a race of the interior savannas of east central and southern Africa, ranging from the interior of South Africa and Southern Rhodesia, northwards through Northern Rhodesia, adjacent Nyasaland, and parts of western northern Portuguese East Africa to the interior and western districts of Tanganyika Territory, north of which it intergrades with the slightly differentiated occidental populations of *B. e. erythrorhynchus* as at present accepted.

In dealing with the characters of *B. e. caffer*, Mackworth-Praed and Grant describe the race as differing from the nominotypical form by being browner above, and warmer in tone of colour. As will be appreciated from a study of our observations on the actual differences segregating *B. e. caffer* of the Transvaal and *B. e. erythrorhynchus*, the former race is slightly darker and colder in tone on the upper-parts, and paler if anything below. It would appear that the two authors concerned based their assessment of the characters of *B. e. caffer* on material emanating from the populations of the humid eastern littoral of eastern and south-eastern Africa, and not wholly on the birds of the southern interior plateau. We now find that the populations of this oxpecker from the littoral of north-eastern Kenya Colony (Kilifi) and Tanganyika Territory, southwards through the lowlands of Portuguese East Africa to Zululand and (?) Natal are distinctly darker and more richly coloured than interior birds. In the case of the coastal Kenya Colony birds there is also a marked size difference (wings of 3 ♂ ♀ 109, 109, 110.5 mm.), and the rectrices are suffused with cinnamon, in these respects agreeing with the small-sized Lamu, M'koi and Somali birds discussed earlier in this paper, although, of course, differing abruptly in their darker, more saturated colouration. It seems to us that such populations are in all probability no more than minor links between the well differentiated populations of Somalia and the adjacent littoral of Kenya Colony and the darker and larger sized birds occurring slightly further south in coastal East and south-eastern Africa, which latter are readily distinguishable on the basis of much darker colouration from both *B. e. caffer* and *B. e. erythrorhynchus*. As no name seems to be available for this richly coloured coastal form of the Red-billed Oxpecker, we propose to name it

Buphagus erythrorhynchus scotinus, subsp. nov.

Type: ♂, adult. Panda, Inhambane district, Sul do Save, southern Portuguese East Africa (24° 02′ S., 34° 45′ E.). 21st September, 1960. collected by P. A. Clancey. In the collection of the Durban Museum.

Diagnosis: In newly moulted dress differs from *B. e. caffer* Grote, 1927: Palala River, Zoutpansberg, northern Transaval, in being much darker and blacker on the upper-parts, wings and tail (mantle centre about Fuscous (pl. xlvi) as against Deep Greyish Olive/Hair Brown in *B. e. caffer*); darker over the sides of the head and neck, and on the under-parts, darker on the throat and breast; on the lower breast, abdomen and flanks more richly coloured, being slightly more dusky than Chamois (pl. xxx) (whitish buff in *B. e. caffer*). Averaging slightly smaller in size.

Measurements: Wings of 10 ♂♀ 115–125 (118.7), tails 85.5–92 (89.0) mm.

Paratypical material: 16. Portuguese East Africa, 14; eastern Tanganyika Territory, 2.

Measurements of the Type: Wing (flattened) 125, culmen 20.5, tarsus 22, tail (moult) 80 mm.

Range: Humid coastal area of south-eastern and eastern Africa, ranging from (?) Natal (no recently collected specimens available), Zululand, southern Portuguese East Africa, and the northern parts of the same territory to the littoral of north-eastern Tanganyika Territory (west as far as the Usambara Mts.). Intergrades in coastal Kenya Colony with the small-sized, pale coloured populations of *B. e. erythrorhynchus* auct., and presumably to the west of its established range with *B. e. caffer.*

Remarks: The name chosen for the new race of Red-billed Oxpecker is from the Greek σκοτωος, dark, swarthy, etc., which is descriptive of its darker and more saturated colouration when compared with the other two named races.

Acknowledgements

We are grateful to Mr. John G. Williams, Ornithologist of the Coryndon Museum, Nairobi, for assistance and the loan of material from eastern and north-eastern Africa. We also extend our profound thanks to Dr. M. Corinta-Ferreira, of the Museu Dr. Alvaro de Castro, Lourenço Marques, for the loan of the Portuguese East African material housed in the collection of that institution.

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Sclater, W. L. *Systema Avium Aethiopicarum*, part ii, 1930, p. 671.

Sclater, W. L. in Jackson, F. *Birds of Kenya Colony and the Uganda Protectorate*, vol. iii, 1938, p. 1302.

ADDENDUM

Since the above report on the polytypic variation of *Buphagus erythrorhynchus* was written, the Durban Museum has received ten further specimens from Kenya Colony, collected in January and February, 1961, by our taxidermist, Mr. M. O. E. Baddeley. This additional material confirms that two perfectly discrete races occur in the territory concerned. Four ♂♂♀ from Kachileba, Suam River, north-east of Mt. Elgon, have wings 116 (worn), 120, 121, 121.5, whereas 6 ♂♂ from Garissa, Tana River, have wings 109.5, 110, 110.5, 111, 111, 113.5 mm. The Garissa birds are also much paler, especially on the ventral surfaces, than those from near Mt. Elgon, and agree with the other xeric populations occurring further east in Somalia in respect of colour and size. P.A.C. W.J.L.

The relationship of the Guinea-Fowls *Agelastes meleagrides* Bonaparte and *Phasidus niger* Cassin

by B. P. Hall

Received 21st February, 1961

In West Africa and the Congo two monotypic genera of guinea fowl are recognised: these are *Agelastes meleagrides*, the White-breasted or Turkey-like Guinea-fowl of forests from Liberia to Ghana, and *Phasidus niger*, the Black Guinea-fowl of the Congo forest from the Cameroons to Ituri.

In structure and size the two birds are remarkably alike differing most notably from other guinea-fowl of *Numida* and *Guttera* in the texture of the plumage and the length and shape of the tail. From the few field notes available both seem to have similar habits, being denizens of thick forest, very shy, and keeping in small flocks or family parties rather than large flocks like other guinea-fowl.

The differences on which the two genera have been recognised lie in the colour and pattern, and in the extent or lack of feathering on the head and neck.

The adults of *Agelastes* have the head and upper neck bare except for a few sparse white feathers on the neck and throat, and the bare skin is recorded as rose-red in life: the lower neck and breast are white and the remainder of the body plumage slate grey with fine vermiculations. In *Phasidus* there is a band of short, soft black feathers from the nostrils to the hind crown, the sparse feathering of the throat and neck is black and slightly more prolific on the hind neck than in *Agelastes:* the bare skin is recorded by Bannerman as yellow in life, and by Chapin as light red to pinkish grey on the throat: the plumage is uniform dark, sooty brown, with obsolescent vermiculations.

These differences alone seem small grounds for distinguishing two genera and furthermore are not so pronounced in the young. An immature specimen examined of *Agelastes* has the sparse feathering of the head and neck black with a greater concentration of feathers on the crown following the line of the band in *Phasidus*, while younger birds are described as having the white of the lower neck and breast replaced by blackish-brown feathers with no vermiculations, but with the rest of the plumage more like that of the adult.

It seems indeed that the two birds, far from being members of different genera, may be closely related. Mr. R. E. Moreau, who has examined specimens with me, agrees with this view, and when I consulted Dr. J. P. Chapin he replied (*in litt*). "I can readily agree that *Agelastes* and *Phasidus* are geographic representatives of one line of the guinea-fowl family and might be included under a single generic name."

I therefore propose that *Phasidus* be considered a synonym of *Agelastes* and that the Black Guinea-fowl shall be known as *Agelastes niger*.

References:

Bannerman, D. A. 1930. *Birds of Tropical West Africa*, 1: 356–358.
Chapin J. P. 1932. *Birds of the Belgian Congo* 1: 657–660.

4 OCT 1961

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Dr. J. G. Harrison, "Merriewood", Sevenoaks, Kent. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1961

17th October, 21st November, 19th December.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Edited by
DR. JEFFERY HARRISON

2 NOV 1961
PURCHASED

Volume 81
No. 8

November
1961

-2 NOV 1961
PURCHASED

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

Volume 81

Number 8

Published: 1st November, 1961

The five hundred and ninety-second meeting of the Club was held at the Rembrandt Hotel, S.W.7, at 6.45 p.m. on Tuesday, 17th October, 1961.

Chairman: CAPTAIN C. R. S. PITMAN

Members present, 31; Temporary Associates (Overseas), 2; Guests, 14; Total, 47.

Ten Year Scientific Index for the Bulletin

The Committee have agreed to produce this very necessary Index, covering the ten year period prior to Volume 80, for which a Scientific Index was published. We are very pleased to announce that the Royal Society have most generously awarded us a Grant of £100 towards the production costs, but as these are likely to be about £250, any further contributions will be most gratefully received.

A bird photographer in Spain

Mr. Derrick England gave an entertaining talk illustrated by excellent colour transparencies, of his experiences in the Almiria area of Southern Spain. It was unfortunate that we were unable to see all the photographs owing to a projector failure. Mr. England referred to the Bluethroat, *Cyanosylvia svecica* in Spain as being quite different in habit, stance and song from those he had seen elsewhere and the males all appeared to lack any white spot. Interesting shots were shown of an incubating female Golden Oriole, *Oriolus oriolus*, a very old bird by her feet and in advanced male plumage. The young all died during hatching. In the same conifer forest the remains of a Roller, *Coracias garrulus* was found beneath the nest of a Honey Buzzard, *Pernis apivorus* and some excellent photographs of the former included one of the bird caught by its wing when leaving the very small nesting hole and Mr. England thought that this might have been the way in which the Honey Buzzard had caught a Roller. In the same forest, a Rock Sparrow, *Petronia petronia* was found nesting in a Green Woodpecker's *Picus viridis* hole. We were also shown photographs of a young male Black-eared Wheatear, *Oenanthe hispanica*, which had been reared by Mr. England, the male parent of which was the black-throated variant of the species.

Observations on the breeding of the Sandgrouse *Pterocles alchata* and *senegallus*

by S. Marchant

Received 16th January, 1961

SUMMARY

Observations on 23 nests of *Pterocles alchata* and 5 nests of *P. senegallus*, found between 4th June and 18th July, 1960 in an area south-east of Baghdad, Iraq, are described, including details of the incubation and its share between the sexes, as well as some remarks on the nest, clutch-size and laying.

What is taken to have been the watering of the young by the male, bringing water in his belly feathers, was once observed for a brood of *P. senegallus*.

The length of the breeding season and lack of breeding success are also mentioned, as well as the food of *P. senegallus*.

INTRODUCTION

Although unable to make an exhaustive search of the literature, I have not found anything except essentially casual references to the breeding of sandgrouse in the wild. Most of the standard works on the birds of the areas in which sandgrouse occur, describe the eggs, nests and breeding habitats of some or all species, but go very little further; and in this connection I refer to such authors as Bannerman (1931), Archer and Godman (1937), Bates (1930), Cave and Macdonald (1955), Hume and Marshall (1879), Jackson (1938), Meinertzhagen (1930, 1954), Praed and Grant (1952), Roberts (1940), Stuart Baker (1935) and Witherby *et al.* (1940). For Iraq itself the only reference to the breeding of these species is by Ticehurst *et al.* (1921–2), where there is some conflict between different accounts. At the same time most authors mention other aspects, such as the share of incubation by the sexes, the incubation period and care of the young, without referring to the observations on which their statements are based. In particular there is doubt as to how the parents provide the young with water, if they do so at all, though recent expressions of opinion (Meinertzhagen, 1954; Hüe and Etchécopar, 1957) have been that the idea of the male bringing water in his belly feathers is fantasy.

On the other hand I am grateful to Mr. D. Goodwin for referring me to papers by Meade-Waldo (1896, 1897, 1906) and St. Quintin (1905) on the breeding of certain species in captivity. These accounts are the only ones which I have found, not only giving details of incubation, but also saying quite precisely that the male brings water to the young in its feathers.

In view of this apparent lack of recorded observations in the wild, the following notes on the breeding of *Pterocles alchata* and *Pterocles senegallus* in an area near Baghdad in the summer of 1960 may be of interest.

BREEDING HABITAT

The area was about 40 km. south-east of Baghdad on the eastern side of the road to Kut and from 2 to 5 km. distant from the road. Here the land is absolutely flat, in summer time a desert of hard, baked clay with insignificant sandy or finely gravelly patches, only interrupted by low irregular ridges which represent the remains of canals built by ancient civilisations. Between these ridges the desert is often totally barren without a single plant over many acres, but in places the Arabs are able to use areas where the winter rains formed shallow flashes, for cultivation and by May when the sandgrouse breed, these ploughed-up areas are either covered with barley, barley stubble or low, thorny or prickly, xerophytic plants. Nearer the Kut road this cultivation is continuous and assisted by irrigation from the Tigris. One large area alongside the continuous cultivation, itself uncultivated, supported a thin scatter of low tamarisk and other woody plants.

Both species were breeding throughout this area and as far as I could judge, neither showed any preference for particular types of terrain. I found nests of both close to one another not only on the flat barren wastes, but also in the area supporting the thin tamarisk growth. I only saw one nest (of *alchata*) in the patches of old or new cultivation, but admittedly I hardly searched such sites at all. It was easiest for me in the limited time at my disposal to drive over the open desert and spot the sitting birds.

The birds were numerous in my study area and indeed over a much wider area, but could not have been called abundant or in really large numbers. In all I found 23 nests of *alchata* and 5 of *senegallus*, as well as some broods of both, and I think that this ratio is representative of the proportions of the two species in the area.

Broadly speaking, the area lies about 10 km. distant from the Tigris, though I never located it precisely in relation to the river: yet at the same time for much of the breeding season irrigation water occurred much closer to the nesting area. Some water was certainly available not more than 3 km. from some of the nests, but I have no idea whether the birds made use of it: in fact, I never watched the birds drinking and had no knowledge of where they did so nor of that aspect of their behaviour.

NEST

Many of the authors quoted say that the nest is a scrape. For instance, Meinertzhagen (1954), discussing *senegallus*, says: "The nest is a small scratching in absolute desert." Now, four of my five *senegallus* nests and fifteen of my twenty-three *alchata* nests were in natural hoof-marks unaltered by the birds. In the remainder the ground could have been scratched out slightly by the birds, especially in the case of the only four nests (all *alchata)* found alongside a small tuft of vegetation. No nest had a trace of material added by the bird (Ticehurst *et al.*, 1921; Allouse, 1953). I would conclude therefore that it is unusual for either species to prepare a nest, but that the birds normally select a suitable natural hollow or foot-print in which to lay their eggs. The foot-prints vary considerably in depth, probably depending on the state of the ground when the animal passed, rather than on the sort of animal, because I do not think they were formed by anything other than camels. The shallow ones were evidently so formed, but the oldest and deepest were merely shapeless or conical depressions, up to three inches or so below the general surface, and gave no clue to their origin. On the most barren desert which had not been disturbed except by the passage of solitary animals, it was worth while to follow a line of foot-prints because somewhere along it I often found a nest.

CLUTCH SIZE

Most authors agree that the full clutch is usually three eggs for most species of sandgrouse, including the two of this study, but "two or three eggs'' are mentioned often enough and occasionally only two are credited to the birds (Meinertzhagen, 1954, generally and for *alchata*), For *alchata* I saw 1 x C/2, 15 x C/3 and for *senegallus* 5 x C/3, all being nests in which I saw the full complement repeatedly. Several other *alchata* nests were found with one or two eggs only, but had been destroyed on the next visit.

LAYING

The only reference found is by Meade-Waldo (1897) who says ambiguously that the eggs are laid ''with the interval of a day between each''. I believe this was intended to mean an interval of about 48 hours, as my own observations at one *alchata* nest suggest either this or irregularity, i.e. 48 hours between one pair and 24 between the next. The details are of interest. About 1000 on 7th June I saw a pair of birds on the desert by a line of foot-prints, but noticed no nest, though I looked along the footmarks. At 1105, when again passing, the cock was standing on the open desert and the female was crouched in a foot-print on a single egg. Unfortunately I cannot be certain that the egg was not there on my first visit. At 1730 on 9th June two eggs were in the hollow, but neither adult was present. At 0604 on 10th June there were still two eggs, cold, and no sign of the adults, but to my surprise at 1032 the female was on the nest with three eggs. At the time I did not realise the obscurity of this point and subsequent opportunities of proving the routine failed by destruction of the nests, but two things seem evident, one, that the eggs are not laid particularly early in the day, and two, that they are not all laid at regular 24-hourly intervals.

INCUBATION

It is generally agreed that for all species of sandgrouse the female incubates by day and the male by night; but Meade-Waldo (1897, 1906) and St. Quintin (1905) are the only authors I have read who quote their own observations. Moreover, Meade-Waldo (1906) says that the change-over occurs about 5 p.m. It is also stated that incubation in the wild is perforce continuous, otherwise the eggs would be baked by the sun, since the temperature on the ground in full sunlight may well be 180–200°F. in the deserts where the sandgrouse breed (Archer and Godmen for *exustus*, 1937: Hume and Marshall, 1879, for the same species, quoting instances of finding eggs with the albumen semi-coagulated by the heat). Pitman's similar opinion for *alchata* is given by Ticehurst *et al.* (1921), who also quote Logan Home as saying that they sit very little. Certainly there has been some difference of opinion on this matter, perhaps arising from Sushkin's much quoted opinion for *Syrrhaptes paradoxus* (Bannerman, 1959) that development of the embryo is helped considerably by the sun's heat.

However, my own observations show beyond doubt that incubation is continuous. In *alchata* the male goes onto the eggs at about 1800, as I observed three times at three different nests. On each occasion the male which had been nowhere in sight, flew in and landed at varying (20–300 m.) distances from the nest: the female left and flew away directly from the eggs at 1750, 1804 and 1810 on the different occasions, while the male was still 30–60 m. away. The male then settled on the eggs from 3 to 15 minutes later and remained there till next morning, as I once proved by sitting alongside in my car the whole night. On three other occasions in the evening I found males incubating after 1800, twice as early as 1730 and twice at 1750. In the morning I often saw the sitting male before 0800 and four times at three different nests watched the change-over. Each time the female flew in from out of sight, landed about 200–300 m. away and ran up to the nest with hesitation, taking 6–28 minutes in the process, even flying to and fro at times, though this may have been caused by my being too close to the nest. It finally settled on the eggs at 0808, 0817, 0835 and 0837 on the different occasions, on three of which the male stayed on the eggs till the female was alongside, stepped off, waited at the distance of about 1 m. till the female was well settled and then departed for 500–600 m. or out of sight. On the other occasion it flew away when the female was 30 m. distant. Thereafter until the evening relief the female incubates. I once watched the female on her eggs from 0830 to 1400, and at another nest from 1300 till the evenign change, during which periods she remained motionless, facing the brisk northerly breeze and with no signs of distress. She never left the eggs except when deliberately or accidentally disturbed by me (thrice) or on the approach of an inquisitive Arab (once). I am thus convinced that normally the eggs are never left once incubation has started, except perhaps for short periods at the change-over or when the bird is disturbed by passing animals or men. When animals or men on foot approach, the sitting bird leaves the eggs when they are 80–200 m. distance as I twice observed: but it seems to have little fear of a car, as I was repeatedly able to drive slowly right up to the nest and often the bird would only leave when I got out. Moreover I only found some nests when the bird flew up in front of the bonnet of the car.

For *senegallus* the routine is very similar. The male sits till 0930–1000 or thereabouts, when I twice saw the change-over at 0927 and 1018 respectively, the female having spent 5 and 20 minutes approaching, the second time being rather nervous and flying to and fro several times. The actual change took place as for *alchata*, the male staying on the eggs till the female was alongside, then stepping off the eggs, waiting for the female to settle and finally flying away out of sight after a short pause. The female then incubates until about 1900, when I witnessed one change precisely at that hour, the female leaving the eggs, calling, when the male was still 80 m. distant. I have no doubt that the male then continues to incubate till the next morning, as several observations showed that he was on the eggs late in the evening and always there first thing in the morning.

For neither species did I establish when continuous incubation started, but I suspect that until the last egg is laid, there is a period of less simple and regular behaviour than that suggested by my observations of fully incubating birds. For one thing once the female is on the eggs during full incubation I never saw the male approach the nest nor even suspected its presence within the range of ordinary observation. Thus I am convinced that for these two species there is no truth in the suggestion that the male supplies the sitting female with water by regurgitation (Meinertzhagen, 1954 for *senegallus*). Yet at nests in which I subsequently knew that a full clutch had not been laid or where I believed that the last egg had recently been laid, the male attended the female closely. The first nest which I found was the C/2 *alchata*, mentioned above, and my attention was attracted by a group of five birds on the desert—four males and one female. The males kept walking around the female which eventually squatted on what proved to be the full clutch of two eggs. The males then flew away one by one, till a single one remained, still walking round the female which kept turning round on the eggs to face him, at times stretching out her head along the ground to point at him, or peering round over her shoulder to follow his movements. I saw a very similar occurrence at another nest with three eggs which was destroyed at my next visit. Further, at the nest mentioned above, when discussing the laying routine, the male at times evidently attended the female while laying took place, and it seems certain that on one night when there were only two eggs, they were unattended all night. I found a similar probability with one *senegallus* nest from which I watched the female fly away with the male at 1723: that nest was unattended at 1830 and the two eggs could well have been left uncovered all night. Thus I believe that until the last egg is laid, incubation only occurs by the female during daylight, of necessity to prevent overheating of the eggs, and that during that time the male often attends the sitting female closely.

INCUBATION PERIOD

Witherby *et al.* (1940) give (22) 23–24 (27) days under hens and 28 days in incubator for *S. paradoxus* and Meade-Waldo (1906) says 21–23 days for captive *alchata* and (1897) that the young are hatched on the 24th day. My own observations were too spasmodic to stand much chance of deciding this point and indeed I only knew one *alchata* nest which hatched for certain and that was the first one found. I have mentioned the circumstances of its discovery on 4th June at 0830, and that I believe that then the clutch had only recently been completed, probably within the preceding 24 hours. On 23rd June at 1720 I found two tiny young in the nest, certainly less than 24 hours old. On this slender evidence it may be that the incubation period in the wild is only about 19–20 days and somewhat shorter than quoted for captive birds.

THE YOUNG

I saw very many fewer young than I saw eggs and naturally had no chance of following the history of any particular brood. When very small, downy and obviously under a week old, the young of both species follow their parents about on the desert extremely closely, running right alongside the whole time, each parent with one chick, if there are two (I never saw a brood of three) and picking up their food independently. When feathered and a third to a half grown, they can fly quite strongly and I once saw one young *alchata* of this size with a small pack of adults and apparently behaving fairly independently. This would suggest support for Meade-Waldo's (1906) statement that the young quickly become independent, about the tenth day roosting separately.

My most important observation was of a brood of two *senegallus*, about a quarter grown and beginning to feather. I found the birds at 0820 on 15th July, photographed the young and drove off 100 m. to watch. The parents immediately returned and, each taking one chick, separated to about 20–30 m. They then ran off steadily across barren desert, going further and further, at times feeding, till they entered an area with a scatter of low tamarisk and desert plants some 600 m. from where I first found them. By that time I had followed and was watching through binoculars from 250 m. I saw both young suddenly run into the shelter of separate plants about 50 m. or so apart and squat. The parents then joined one another and after running on for another 50 m., took wing at 0905 and flew away, calling. I then drove up to within 150 m. of where the young were and waited. At 0922 both adults returned, calling, and landed near the chick which had been accompanying the male. As they flew over, I remarked that the male was flying awkwardly and not with its normal ease. As soon as it landed, it walked to where the chick was with a waddling, open-legged gait and not in the usual manner in which each foot appears to be placed more or less in front of the other. The chick quickly appeared and ran up to the male which stood erect with back to the sun in a totally different way from the normal, rather horizontal stance. The chick stood between its legs. A minute or so later the second chick also ran up and both sheltered under the male in its shade. I was too far away to see details accurately and in any case the male had its back towards me partly obscuring the view, but I got the impression that both chicks were putting their heads up towards the feathers of the male's belly and lower breast. At 0926–7 one chick left the male and joined the female which had stood by at a distance of about 15 m. throughout the performance, and thereafter both parents, each with an attendant chick, proceeded to feed normally.

Personally I have no doubt that in seeing this I was witnessing the method by which the young are watered. It agrees as well as can be expected with Meade-Waldo's (*op. cit.*) and St. Quintin's (*op. cit.*) accounts of captive birds and Meade-Waldo's supplementary notes on field behaviour (1906). In this case the point which has worried critics (St. Quintin, *op. cit.*: Meade-Waldo, 1906: Archer and Godman, 1937) regarding the improbability of being able to transmit moisture in the feathers far in an arid climate, seems unimportant. At the worst the birds I saw were only 8–9 minutes in the air on their return flight and as they must presumably have spent a few minutes at the water, it is fairly certain that they did not have to fly for so long.

Apart from these observations, it has been pointed out to me by Mr. D. Goodwin that sandgrouse have bills which are in no way adapted for receiving food or water by regurgitation, which is normally presented as the alternative method for watering the young (Hüe and Etchécopar, 1957: Meinertzhagen, 1954 for *exustus*). I entirely agree with Mr. Goodwin and for myself do not believe that the habit of water carrying in the feathers can be seriously doubted any longer, particularly as it has already been described unequivocally by Meade-Waldo and St. Quintin.

GENERAL

There are a few further matters which deserve mention, although my observations on them were far from complete.. The breeding season probably starts in late April or early May (Ticehurst *et al.*, 1921) and certainly lasts till late July or early August. I first went out to find nests on

4th June which must have been some weeks after the start of laying, at least for *senegallus* because on 7th June I found a newly hatched brood of that species. Though I saw no young of *alchata* until 23rd June, there were plenty of full clutches two and a half weeks earlier. It thus seems that Allouse's remark (1953), based on Ticehurst's records, that *senegallus* is a later breeder than *alchata*, is hardly correct. On the other hand I found three incomplete *alchata* clutches between 15th and 17th July, but I have no idea whether these were second broods [recorded for the species in captivity by Meade-Waldo (1906)] or replacements. I suspect the latter, however, because the hatching success seems to have been remarkably low. Out of all the nests found I was only certain that one of each species hatched and knew that most were destroyed. One *alchata* nest was probably destroyed by the passage of a flock of goats and sheep. Another *alchata* and one *senegallus* were destroyed over night and probably during darkness. Oddly enough the broken egg-shells suggested an avian predator, but it is difficult to suggest a likely species. Ravens (*Corvus corax*) certainly frequent the area, but only seldom. Of mammals there are two species of fox, commonly seen early in the morning, and no doubt several species of rodent, while reptiles are represented by one, and perhaps two, large species. The destruction of the *senegallus* nest which occurred between 1810 and 0525, was interesting because it was situated on a completely flat mud desert far from any possible lair of a predator and one would have thought that its discovery at night would have been most unlikely.

Finally Meinertzhagen (1954) says that *senegallus* is a species which is never found near or in arable land and does not take grain or smooth seeds. But a male and female, shot for me by a friend on 21st October, were both obtained in or at the edge of cultivation and both had their crops stuffed with barley, as identified for me at the British Museum. Moreover, as I have said before, they were breeding on the fringes of cultivation and often within sight of growing barley.

CONCLUSIONS

It seems worth summarising these points on which my observations are at variance with published statements or generally accepted ideas.

1. Neither *alchata* nor *senegallus* normally prepare a nest hollow and perhaps equally rarely add any material.
2. The clutch-size is three, rarely two.
3. Once incubation has started, perhaps after laying of the last egg, it is continuous and the eggs are normally not left uncovered. The male *alchata* incubates at night, from about 1800 to 0800 and the female for the rest of the daylight hours. In *senegallus* similar change-over occurs about 1000 and 1900.
4. In neither species was there any evidence for the male supplying the incubating female with water by any method.
5. In *senegallus* the male brings water to the young in its belly feathers, perhaps normally at about 0900.
6. The breeding of both species extends from early May till late July and *senegallus* does not seem to start nesting later than *alchata*.
7. It does not seem that *senegallus* is much less of a bird of the cultivation than *alchata*, and will certainly take grain.

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Note on some eggs and nests attributed to the Stork-billed Kingfisher, *Pelargopsis capensis* (Linne)

by Mr. C. J. O. Harrison

Received 19th February, 1961

When the eggs of the Stork-billed Kingfisher, *Pelargopsis capensis* (Linné), in the collection of the British Museum (Natural History) were examined, five clutches of small eggs were found which appear to have been wrongly attributed to this species. Since these clutches, with the relevant data, were used in the description of the eggs and nest of this species by A. O. Hume (1890) and referred to by later authors, it is necessary to re-examine them in the light of later knowledge in order to establish their correct identity.

Authentic eggs of *Pelargopsis capensis* are within the following size limits—length 39.9–34.2 mm., breadth 32.5–29.3 mm., average size 36.6 x 30.9 mm. (Baker 1934).

One clutch of the small eggs whose identity is questioned was taken by J. R. Cripps at Dibrughur (Dibrugarh), in Assam, on 27th April, 1880. This became part of the Hume collection (B. M. Reg. No. 91.3.20.7765–8) and a description was published in Hume's "Nests and eggs of Indian birds" (1890) under the species *Pelargopsis gurial* (now *Pelargopsis capensis*). The nest was in an 18 inch tunnel in the earth on the roots of a fallen tree. The eggs measure 29.25 x 27 mm., 27.25 x 25 mm., 29 x 26.75 mm. The original clutch contained four eggs. In the same account data are given for a clutch of the larger eggs whose authenticity was established by being collected together with a sitting bird.

Another clutch of small eggs was collected by C. Hopwood for H. N. Coltart's collection (B. M. Reg. No. 1961.1.304) at Mokka Choung, Tharrawaddy, Burma, on 14th April, 1904. He claimed that identity was certain, and described the nest as a hole in a bank 18 inches deep with eggs laid on bare earth. The eggs measure 28.5 x 25.75 mm., 27 x 24.5 mm., 29 x 24.5 mm., 28.25 x 24.5 mm. Someone, possibly Coltart, had noted that the identification was wrong.

The remaining three clutches of small eggs were taken by C. J.Bingham in Tenasserim. The first is a clutch of three (B. M. Reg. No. 84.5.23.21–3) from Thoungyeen, N. Tenasserim, taken on 5th April, 1882. They measure 30 x 26.25 mm., 29.5 x 26.25 mm., 29 x 26.75 mm. The second is a clutch of four from the Hume collection (B. M. Reg. No. 91.3.20.7738–41) taken on the Meplay at Thougyeen on 23rd March, 1880. They measure 29.25 x 26 mm., 30 x 26.5 mm., 29.5 x 26.25 mm., 28.75 x 25.25 mm., Bingham describes (Hume, loc. cit.) watching the birds visit the nest—a five foot tunnel in the bank, the nest cavity quite bare. The third is a clutch of three from the Hume collection (B. M. Reg. No. 91.3.20.7735–7) taken at Sinzaway, Tenasserim, on 10th April, 1877. They measure 29 x 25 mm., 29.75 x 25 mm., 28.25 x 24.75 mm. They were taken under exceptional circumstances, for Bingham wrote (1877): 'I am rather diffident about writing a note on the finding of the eggs of this bird, as they were found by myself personally in a made nest in the fork of a bamboo growing near the bank of a choung, a thing contrary to the habit of all kingfishers. Moreover, though I fired at the bird as she flew off the nest, I missed her. In my own mind there is not the ghost of a doubt that the eggs in question belonged to the above species, as I had a close look at the bird, as she sat on the nest, with a pair of binoculars, at not more than 15 yards distance. The nest was, as I have already said, placed in the fork of a bamboo near water. It was a loosely constructed shallow cup of rough grass-roots, wholly unlined, at a height of about 4 feet from the ground.'

These five clutches of eggs can only be attributed to *Pelargopsis capensis* if it is assumed that this species lays eggs of two distinct sizes, intermediate sizes being absent. The difference cannot be regarded as subspecific since clutches of larger and smaller eggs have been collected in the same areas. It is obvious that there has been confusion with some other Kingfisher and, since identification was based on sight records, the species should be smaller but sufficiently like *P. capensis* in general colouration to justify misidentification if a short generalised description was the only available reference at the time.

The only species which fits these requirements is the White-breasted Kingfisher, *Halcyon smyrnensis* (Linné). This has a heavy red bill and blue colour on the wings, rump, and tail, as does *P. capensis*. Its smaller size, white throat, and deep brown head and breast should distinguish it from the larger, buff-brown *P. capensis*, but it is difficult to envisage how the bird will appear in the field, and few, if any, published descriptions suitable for field use appear to have been available at the period when most of these clutches were collected. The eggs of *H. smyrnensis* are within the following size limits—length 31.1–26.0 mm., breadth 28–25 mm., average size 28.9 x 26.2 mm. (Baker 1934). This agrees with the sizes of these small eggs.

The Black-capped Kingfisher, *Halcyon pileata* (Boddaert), has a similar sized egg, and is present in the areas concerned, but its colouration is so distinctive that it is improbable that confusion could occur between this and other species.

Stuart Baker (1927) suggested that the clutch of small eggs taken by Cripps at Dibrughur was probably that of *H. smyrnensis*, but in a later work (Baker 1934) he quoted the description of the nest when referring to *P. capensis*.

The description by Bingham of a nest in a bamboo fork has already been quoted. Stuart Baker (1934) mentioned it but said that the nest was almost certainly that of some other bird. Later authors have ignored the account. Yet in the same work Stuart Baker describes in some detail his discovery of the fact that some pairs of *H. smyrnensis* in Assam made nests, in hollows between rocks or in overhanging tree-roots, by carrying wet moss and placing it in layers on the site of the nest, and then fashioning a rough hollow. He describes how he watched a nest being built. Only a few nests were found, the majority of pairs making typical nests by burrowing into banks.

There are records of *P. capensis* nesting in stumps and holes in trees, and of *H. pileata* nesting in a hole in a branch (Baker 1934). If species that normally nest in banks can adapt themselves to holes in trees it seems possible that a species which can place vegetable matter in a crevice in rocks or roots to form a nest could similarly place material in the fork of a bamboo four feet from the ground, or possibly utilise an existing platform of plant material. It is a pity that there is no information regarding the vegetation immediately surrounding this nest site. Had Bingham attributed his record to *H. smyrnensis*, and not to *P. capensis*, it might have been received with less incredulity.

There is a note by R. E. Moreau in Nicoll's *Birds of Egypt* (Meinertzlagen, 1930) concerning the Pied Kingfisher *Ceryle rudis*. A drawing from an Ancient Egyptian tomb-painting shows a genet attacking young Kingfishers of this species which are assembled on a nest-like platform. He comments that: 'The artist who had observed birds sufficiently to draw that marsh-scene can hardly have been ignorant of the fact that Kingfishers breed in holes. Yet he depicts not only the brood of young on a flat nest, but also Kingfishers sitting on eggs on a flat nest.' This seems to suggest that *C. rudis* might, under certain circiumstances, make a nest of the type described for *H. smyrnensis*.

There is little doubt that these clutches of small eggs attributed by Hume to *P. capensis*, and referred to as such in later works, are in fact the eggs *H. smyrnensis*. They are being re-identified as such in the National Collection. In view of the additional evidence there is justification for accepting Bingham's description of an exceptional nest-site as referring to the latter species.

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What is *Tchitrea melampyra* Hartlaub, 1857?

by JAMES P. CHAPIN

Received 28th March, 1961

In the second volume of his *Systema Avium Æthiopicarum*, 1930, p. 434, Mr. W. L. Sclater used the name *Tchitrea melampyra* Hartlaub[1] for a species of paradise flycatcher which in western Africa, from the Cameroon to northern Angola, is widely sympatric with *Terpsiphone viridis* (P. L. S. Müller). He further explained that *T. rufocinerea* Cabanis[2] might well be synonymous with *melampyra*.

As described by Cabanis, *T. rufocinerea* of the Portuguese Congo differs from the race of *T. viridis* occupying the Gaboon and Portuguese Congo coastlands in having the under tail-coverts rufous instead of gray and in lacking any well-developed crest of feathers on the occiput.

David Bannerman and Claude Grant continued to use the specific name *melampyra* in preference to *rufocinerea* and claimed that Hartlaub's type of *melampyra* was preserved in the British Museum. Many years ago, however, Professor Erwin Stresemann and I had studied the original description of *melampyra* by Hartlaub and decided that it would apply much better to a rather nondescript male of some form of *T. viridis* than to the bird subsequently named *rufocinerea*. The type of the latter is still preserved in Berlin.

The description of *melampyra* was published in Latin, with dimensions in old French inches. Translated into English it would read: "Above bright rufous; head, neck, and breast steely-black; abdomen lighter gray; no white band on the wing; primaries grayish on their outer margins; outer tertials rufous on outer part, those nearest the back wholly rufous; scapulars and lesser wing-coverts wholly rufous; under wing-coverts gray; beak and feet blackish."

The old French inch was equivalent to 27 mm. So the measurements given would mean: "Total length approximately 222.7 mm., beak (exposed culmen) 12.4 mm., wing 76.5 mm., median rectrices 135 mm., lateral rectrices 65.2 mm."

All the above would fit a sub-adult male of *T. viridis* with middle tail-quills not greatly prolonged. The blackness of the breast is suggestive, and there was no mention of rufous under tail-coverts. The sex was given as female, plainly in error. Thus I have always used the name *rufocinerea* as did Reichenow and Stresemann, and not *melampyra*, for the bird with rufous coverts beneath the tail and shorter feathers on the crown[3].

Quite recently my decision in this case was again criticized[4], so I asked my friends J. D. Macdonald and C. W. Mackworth-Praed to consult the original description of *melampyra* and compare it with the supposed type in the British Museum. This they kindly did, and both agreed that the London specimen cannot really be the type, for its total length is only about 183 mm., and its tail of quite a different shape from that indicated for *melampyra*. The under wing-coverts are brown, not gray; and the under tail-coverts rufous-brown. In short, the London specimen agrees with *rufocinerea* but does not conform to the description of *melampyra*. In the British Museum Register, I am further informed, the words "type of the species" seem to have been added in a different hand, well after the original entry.

This settles the question in favour of my use of *Terpsiphone rufocinerea* Cabanis. But another awkward query may now be raised: should not the name *melampyra* Hartlaub of 1857 replace *speciosa* Cassin[5] for the race of *T. viridis* that ranges so widely from the coastal area of the Gaboon all across the forest belt of Lower Guinea?

Inasmuch as the original description of *melampyra* gave no distinctive markings such as characterise the several races of *T. viridis*, I feel that we shall do well to discard that name altogether as indeterminate, rather than to cause further confusion amid the names of these paradise flycatchers.

Cassin's description of *speciosa* was much more satisfactory, since he mentioned a white stripe on the wing, formed by the white edgings of greater wing-coverts and some secondaries. The sex of his type was not mentioned; but it was plainly a rufous-backed male, with upper tail-coverts glossy black, under tail-coverts blackish gray, and with median rectrices 63.5 mm. longer than the others, rufous with some brownish black along shafts and at tips.

On the same page, lower down, Cassin gave a new name, *duchaillui*, to another colour-phase of this same race and from the same locality, mistaking a white-backed adult male with long white median rectrices for a female. From the Camma River Cassin also had had paradise flycatchers with rufous under tail-coverts and no white on the wing, but he too believed these had been named *melampyra* by Hartlaub. So the error began very early. It is amply proved that *T. viridis* and *T. rufocinerea* do live together along the Gaboon coast.

References:
[1] *Tchitrea melampyra* Verreaux, in Hartlaub, 'Syst. Orn. Westafr.', 1857, p. 90 (type from Gaboon).
[2] *Terpsiphone rufocinerea* Cabanis, 1875, Journ. f. Ornith., p. 236 (type from Chinchoxo, Portuguese Congo).
[3] See Chapin, 1948, Evolution, Vol. 2, No. 2, pp. 113–118, 124–126; 1953, Bull. Amer. Mus. Nat. Hist., Vol. 75 A, pp. 710–715.
[4] Rand, Friedmann, and Traylor, 1959, 'Birds from Gabon and Moyen Congo', Fieldiana: Zoology, Vol. 41, No. 2, pp. 358–361.
[5] *Muscipeta speciosa* Cassin, 1859, Proc. Acad. Nat. Sci. Philadelphia, p. 48 (type from Camma River, Gaboon).

Some notes from Northern Rhodesia

by C. W. BENSON

Received 8th April, 1961

All specimens mentioned in the following notes are now in the National Museum, Bulawayo, unless otherwise indicated.

(1) A specimen of *Accipiter r. rufiventris* Smith was collected by J. Goouws in riparian forest at Kitwe in February, 1959. It is mainly in immature plumage, but with the throat rich rufous. The wing measures 252 mm., and so it is evidently a female. M. P. Stuart Irwin has compared it with Southern Rhodesian specimens, and agrees with the identification. This is the first record of this species from Northern Rhodesia.

(2) A female specimen of *Falco fasciinucha* Reichenow & Neumann was collected by me on a rocky hill in the Serenje District at 13° 10′ S., 31° 03′ E., on 11th October, 1960. It is in adult dress; rump and lower back very pale, contrasting with the dark slate of the rest of the upperside, see

Benson (*Ibis*, 1960: 131). The wing measures 229, the tail 98 mm. The stomach contents were bird remains, including a foot apparently of an *Anthus* sp.

(3) *Cisticola pearsoni* (Neave) is included in Benson & White's Check List (1957) from near Solwezi. A more precise location, according to the original reference (*Bull. Brit. Orn. Cl.*, 68, 1947: 35) is from near Kipushi, which is on the Congo border at 11° 46′ S., 27° 14′ E. (Chapin, *Bds. Belg. Congo*, 4, 1954: 681). The two specimens in question are now in the Chicago Natural History Museum. Major M. A. Traylor writes that on comparison with a specimen of *C. melanura* (=*pearsoni*) from Angola it was evident that they were not *pearsoni* but *C. fulvicapilla angusticauda* Reichenow. He lent them to Mrs. B. P. Hall, who confirmed the identification. White and I agree that the reidentification should be accepted. Traylor informs me that both specimens are males, collected on 26th/28th June, wing 47, 48, tail 51, 55 mm. While attached to E. L. Button recently, Jali Makawa collected eleven males and two females for me at Solwezi, between 13th January and 20th February, all of which are *C. f. angusticauda*. The males have wing 47–50, tail 47–55, the females wing 43, 45, tail 42, 47 mm. Thus even though it occurs in the Katanga (Chapin, *Bds. Belg. Congo*, 3, 1953: 380), on present evidence *C. pearsoni* cannot be accepted as occurring in Northern Rhodesia.

(4) Several cases of albinism have recently come to light. On 28th November, 1960, in the Luano Valley, J. M. C. Uys collected a nightjar in completely albino plumage. It has wing 131 mm. only, and Uys states that it was barely able to fly, and under the parental care of a *Macrodiptery vexillarius* (Gould). On 27th November, 1960, at Chilanga, Jali Makawa collected a largely albinistic female *Cercomela familiaris modesta* (Shelley). It is wholly white below, and with only small traces of the normal brown and chestnut coloration on the upperside. Some chestnut tips are apparent on the wing-coverts, showing that it is immature. Of three males of *Bradypterus baboecala msiri* Neave collected by Uys in the north of the Kafue National Park on 13th October, 1960, one shows signs of albinism, having some white towards the base of the rectrices, and in the remiges, two of the outer primaries in one wing being completely white. Major I. R. Grimwood, on 2nd December, 1959, observed a mixed breeding colony of *Ardea cinerea*, *A. goliath*, *Egretta alba* and *Anhinga anhinga* on the edge of the Kariba Lake. There were five nests of the latter species, all containing young soon to be fledged. One nest contained two young in white plumage except for some buffy streaks on the nape. The only other local record of albinism of which I am aware is of a partial albino of *Cisticola tinniens shiwae* White from the Mwinilunga District (*Ibis*, 1958: 284).

(5) Reference *Bull. Brit. Orn. Cl.*, 81, 1961: 5, the correct eastern co-ordinate for Musense is 31° 05′, not 30° 05′.

Postscript

(6) Recently, while attached to G. Bell-Cross, Jali Makawa collected a specimen of *Artomyias f. fuliginosa* Verreaux, in riparian evergreen forest at Kalene Hill, in the Mwinilunga District at 11° 11′ S., 24° 11′ E., on 12th September, 1961. This is the first record of this species from Northern Rhodesia. Two days later, in the same locality and habitat, he

collected with the same shot an adult and spotted juvenile of *Muscicapa cassini* Heine. The latter specimen could not have been more than about one month old. Another interesting record is a specimen of *Anthus c. caffer* Sundevall, collected in Brachystegia woodland near Kitwe, at 12° 49′ S., 28° 23′ E., on 4th September, 1961.

Further comments on the taxonomy of British *Anthus pratensis* (Linnaeus)

by P. A. Clancey

Received 13th February, 1961

Apropos to my note on the vexed question of the name to be applied to the ''Atlantic'' race of the Meadow Pipit *Anthus pratensis* (Linnaeus) and my colleague, Mr. Kenneth Williamson's comments thereon (*vide antea*, pp. 10–12), there are one or two points which require to be elaborated on or corrected.

In subspecific taxonomy names are given to populations or aggregates of populations, and the *Type* of a subspecies does not have the same standing in taxonomic theory as would the *Type* of a new species. In geographical races, which are generally based on the sum of characters to be discerned in series of skins, no single specimen can represent the gamut of the variation in any subspecific entity, especially if based on samples of an aggregate of slightly variable individual populations and not on an insular or otherwise isolated population, which would, by virtue of its insularity, be more stable. Furthermore, study of the literature reveals that many *Types* are atypical, and I recollect that it is on record that the *Type* of *Garrulus glandarius rufitergum* Hartert is a bright rufous specimen, quite unlike the norm of the British race of the Jay. Many of the older *Type*-specimens in collections no longer show the subspecific criteria characteristic of the free living populations of birds which they symbolize in our taxonomic arrangement, through the oxidation of the plumage pigments and general deterioration, and some by virtue of being atypical or in worn or juvenile plumage when collected probably never did.

In so far as the application of the name *A. p. whistleri* Clancey, 1942, to the ''Atlantic'' race of the Meadow Pipit is concerned, the fact remains that part of the paratypical series consists of actual breeding birds from the north of Scotland—whether one now considers such material to be ''too worn and bleached for critical taxonomic assessment'' or not is quite irrelevant. By the very use of such original material in the preparation of the differential diagnosis the name *whistleri* is inalterably associated with the Scottish Highland population of *A. pratensis* and no other. The name cannot be sunk into the synonymy of a Continental race just because one worker has evinced difficulty in segregating the *Type* from Swedish birds—a difficulty which I, the original describer, have not experienced on the two or three occasions I have personally investigated this matter.

Another point, if one is going to follow Williamson's tenuous reasoning, one must be prepared to accept that the *Type* of *A. p. whistleri* flew across the North Sea as a juvenile in late July or early August, *i.e.*, long before the onset of the main migration, or else flew across the same stretch of water in a state of full moult. From many years of experience in the western Palaearctic, I do not believe that Meadow Pipits habitually migrate in juvenile plumage or in a state of advanced moult, and all examples of *A. p. pratensis* which I have collected from immigrant flocks in the British Isles had completed the autumnal moult.

Lastly, surely it is incorrect to claim that the valid racial characters of *A. p. whistleri* were not revised and adequately defined and discussed in advance of the publication of *A. p. theresae* Meinertzhagen, 1953, because such can be found in my note in *Bull. B.O.C.*, vol. lxviii, 1948, pp. 54–56.

Birds perching on Hippopotamus

by CHARLES R. S. PITMAN

Received 26th January, 1961

Benson has shown me his note on this subject, to which I can add various records of observations made in Uganda.

In those parts of the Kazinga Channel (between Lakes George and Edward, in Western Uganda) where there are concentrations of waterfowl, it is commonplace and of daily occurrence to see African Darters, *Anhinga rufa* perched on hippos. Often two birds can be seen on the same animal, and once I have seen three. In Bayard Read's beautiful colour film *Birds of East and Central Africa* there is a delightful 'shot' of a hippo slowly submerging, with a Darter on its back.

Other birds seen perched on hippos in the same region include the Reed Cormorant, *Phalacrocorax africanus* and the Common Sandpiper, *Tringa hypoleucos*.

In the Nile, between Lake Albert and the Murchison Falls I have often seen Darters, Reed-Cormorants and Common Sandpipers respectively perched on hippos; on several occasions the African Pied Wagtail, *Motacilla aguimp* and once a Yellow Wagtail, *Budytes flavus;* more than once the Cattle Egret, *Ardeola ibis;* occasionally the Pied Kingfisher, *Ceryle rudis;* and once a Sacred Ibis, *Threskiornis aethiopicus*.

A short way downstream of the Murchison Falls I have several times observed White-collared Pratincoles, *Glareola nuchalis* on hippos, sometimes a single bird, but more usually two.

In Lake Victoria I have occasionally seen White-winged Black Terns, *Chlidonias leucoptera*, one or more, on the almost submerged back of a hippo.

I also recollect the report of a few White-faced Tree Ducks, *Dendrocygna vidua* perched on a hippo; but the strangest record is of three Egyptian Geese, *Alopochen aegyptiacus* settled on one of these 'floating islands'.

Various waders, other than the Common Sandpiper, have from time to time been observed perched on hippos.

Unusual nesting behaviour of the House Sparrow, *Passer domesticus* (L.)

by CHARLES R. S. PITMAN

Received 1st June, 1961

On 10th May, 1961, at Bournemouth, I watched a House Sparrow excavating a nest hole. Such unusual behaviour is worth recording. The site chosen was a crevice between two large stones which formed part of the vertical facing of the Bourne Brook which flows through ornamental gardens.

The ♀ did all the work and was seen to enter the hole for 10 to 15 second periods, emerging each time with her beak full of mud which she deposited on top of the low brook wall (level with the grass lawn) on the opposite side. There was a line of mud pellets along the top of the wall for a length of about 12 feet. The ♀ shook her beak vigorously to help in getting rid of the mud. She was watched working hard for nearly 20 minutes and then she went off to have a rest. The ♂ sat near by and chattered encouragement. From time to time, occasionally while the ♀ was still inside, he entered the hole to see how the work was progressing. When the ♀ finally departed he sat scolding for a while endeavouring to get her to return. Then he went off and came back with a piece of green grass which he took into the hole and left there. Lack of time prevented further observations being made.

Comments on the geographical variation in Carols' Penduline Tit *Anthoscopus caroli* (Sharpe) in southern Africa

by W. J. Lawson

Received 13th April, 1961

Within the southern African sub-continental limits three races of this small tit are recognised, these being *A. c. caroli* (Sharpe) 1871: Ovaquenyama, Ovamboland, South West Africa, *A. c. hellmayri* Roberts 1914: Mapagone, north-eastern Transvaal, and *A. c. robertsi* Haagner 1909: Villa Pereira, Boror, Mocambique. (*vide* McLachlan & Liversidge, *Roberts' Birds of South Africa* 1957, p. 281.) As a result of a recent reassessment of the geographical variation in *Anthoscopus caroli* conducted at the Durban Museum, it would appear as if the characters and distributions of the races as stated in the above reference are inadequate and in need of adjustment.

A. c. caroli (Sharpe) is discernible from the other austral races in southern Africa on the basis of a greyish suffusion on the chest, and a restriction of the buff of the underparts to the abdomen, with no extension of this colour onto the breast. This buff colouration corresponds with the Cream Buff of Ridgway, (*Color Standards and Color Nomenclature* 1912, Pl. XXX). The measurements of sixteen specimens attributable to this race are—6♂♂ wing 53.0–55.0 (54.1), tail 29.0–31.5 (30.2) and 10 ♀♀ wing 52.0–56.0 (53.8), tail 28.0–31.0 (29.4) mm. *A. c. caroli* occurs in northern South West Africa, southern Angola?, the Caprivi Strip, northern Bechuanaland Protectorate, and the western and central districts of Southern Rhodesia. This distribution is in accordance with that stated by Smithers *et. al Check List of the Birds of Southern Rhodesia* 1957, p. 137. For this study nineteen specimens of this race have been examined from western and southern Southern Rhodesia (16) and Bechuanaland Protectorate (3).

In Natal (where it is uncommon), Zululand, eastern and northern Transvaal, north to the south-eastern areas of Southern Rhodesia occurs a markedly different form of *A. caroli* to which the name *A. c. hellmayri* Roberts is applicable. This race is characterised by the buff of the abdomen being appreciably darker than it is in the nominate race, being about Chamois (Pl. XXX), which in this case extends onto the breast.

The measurements of thirteen specimens attributable to this taxon are—7 ♂♂ wing 52.5–57.0 (54.0), tail 27.5–33.0 (30.5); 6 ♀♀ wing 53.5–57.0 (55.1), tail 27.5–31.5 (29.5) mm. In all thirty-eight specimens of this race have been examined, being from south-eastern Southern Rhodesia (24), eastern Southern Rhodesia (2), north-eastern Transvaal (7), Swaziland (2) and Zululand (3). The specimens from the Sabi/Lundi and Mt. Selinda placed as *A. c. robertsi* by Smithers *et. al.* and McLachlan & Liversidge have been examined and are here placed as *A. c. hellmayri* and not the taxon into which they are usually placed.

From the lower Zambesi River valley and southern Nyasaland through Mocambique to the extreme southern Sul do Save with a slight extension westwards along the lower reaches of the Limpopo River as far west as Beit Bridge occurs a markedly pale race of *A. caroli* which I propose to call *A. c. robertsi* Haagner. I have been unfortunate in not being able to examine topotypical material of this race, described on the basis of specimens from Boror, but specimens available from southern Nyasaland, a zoogeographically similar area resemble those available from Sul do Save. A solitary specimen from Feira, on the Zambesi River, is distinctly greyer on the back than the Mocambique specimens, and Mr. M. P. Stuart Irwin of the National Museum of Southern Rhodesia informs me that a specimen from Liwale, Tanganyika Territory, referred to by Grant (*Ibis*, 1947, 288) as being *A. c. robertsi*, is unlike the Mocambique populations and possibly represents some other race. *A. c. robertsi* would appear to be a race characterised by the pale buff flanks, [about Cream Color (Pl. XVI)], being even paler than that of the nominate race from the arid west, with the chest much whiter in which respect it differs from *A. c. caroli* which has a distinctly greyish chest. The measurements of thirteen specimens are 7 ♂♂ wing 50.0–54.0 (52.3), tail 26.0–30.5 (28.8); 6♀♀ wing 48.0–53.0 (50.4), tail 27.5–29.0 (28.1) mm. From the measurements it can be seen that *A. c. robertsi* averages smaller in size than either of the other two races. Material has been examined from southern Nyasaland (2), southern Mocambique (10), and the eastern Transvaal (5). This race intergrades with *A. c. hellmayri* at the extreme southern limits of its range in the eastern Transvaal and extreme southern Sul do Save.

For the loan of material I am indebted to the Directors of the Transvaal Museum (through Mr. O. P. M. Prozesky) and National Museum of Southern Rhodesia (through Mr. M. P. Stuart Irwin). I am also indebted to Mr. P. A. Clancey, Director of the Durban Museum for much valuable criticism during the preparation of this paper.

Notes on African Thrushes

PART TWO

by C. M. N. WHITE

Received 19th January, 1961

(*a*) The present notes continue the consideration of the genera of the African *Turdinae*, and genus groups additional to the two already discussed.

A third group may be considered to consist of the Scrub Robins and some allied forms which are characterised by well graduated and rounded tails with well defined white tips to the outer tail feathers. Typically this is the genus *Erythropygia* of Sclater (1930). Sclater retained *Tychaedon* as a monotypic genus for *T. signata*, whilst Chapin (1953) included *barbata* and *leucosticta* in *Tychaedon*. Chapin's view of the species to be included in *Tychaedon* is undoubtedly correct if the latter genus is to be accepted since these species and *quadrivirgata* clearly form a superspecies with virtually complete allopatry. However there seem no very good reasons to retain *Tychaedon* which would differ only slightly from *Erythropygia* in details of pattern (specific to the superspecies), in a proportionately slightly shorter tail and in rather larger size. Sclater kept *Agrobates* quite separate as a warbler, following the practice of the time when he wrote but I agree with the general present view that it is congeneric with *Erythropygia*. Finally Vaurie (1959) following Heim de Balsac has suggested that all these Scrub Robins should be placed in *Cercotrichas*. The single species of that genus differs mainly in its slaty black plumage and proportionately longer tail than any *Erythropygia*. In general structure and habits the agreement between *Cercotrichas* and *Erythropygia* is close. Little weight can be given to the blackish colour of *Cercotrichas* since many other genera of Passeres such as *Turdus*, *Ploceus* and *Laniarius* have both black and coloured members, and the tail length is no more than a good specific character just as the shorter tail of "*Tychaedon*" is of its superspecies. I accordingly accept *Cercotrichas* as the name for the genus to accommodate all these Scrub Robins with *Erythropygia*, *Tychaedon* and *Agrobates* as synonyms.

Pinarornis, treated by Sclater as a Babbler, and more recently transferred to the Thrushes, appears closely related. It should be recognised as an aberrant relative of the Scrub Robins, somewhat similar to the black *Cercotrichas* in general pattern, and to be placed in the same group of genera.

Chaetops in spite of its peculiarities of colour shares many features in common with this group. The rufous rump parallels some *Cercotrichas*, the tail is strongly graduated with white tips; its association with boulder strewn hills and its general behaviour resemble *Pinarornis*. Both *Chaetops* and *Pinarornis* have loose soft plumage. I therefore place *Chaetops* in this group of genera.

(*b*) *The genus Cossypha*

The genus *Cossypha* is one of the best marked genera of African "robins" on account of its distinctive plumage, which is characterised by a rufous or orange underside, darker upperside, head often with white brow stripe or anteocular spot, rufous rump and tail, the latter often with dark centre feathers. Within this range of characters the included species present an interesting series of recombinations of characters and of varying wing/tail ratios. The longest tailed species, *C. heinrichi* has the tail 113% of the wing, and the greatest amount of white on the head which is in fact wholly white. *C. albicapilla* has the next longest tail, 104% of the wing and a white crown extending in elongated feathers over the nape. In both these species the graduation of the tail is very pronounced. Whether or not in fact closely related the features make it convenient to mention these two species together.

A second group of rather similar birds is formed by *heuglini* and its allies. The tail of *heuglini* is 90% of the wing, that of the very similar but partly sympatric *semirufa* 88 %, whilst *dichroa* which only differs strikingly in having lost the white brow stripe has a tail 84 % of the wing. *C. niveicapilla* is very similar to this group if one considers that its white crown could be formed by continuing the white brow stripes of *heuglini* or *semirufa* to meet on top of the head. In the field in Nigeria I was greatly struck by its general resemblance to *heuglini*. Its tail is slightly longer, 95 % of the wing. Finally the lowland forest *cyanocampter* with tail 87 % of wing also has a *heuglini* type of pattern. These five species appear rather closely related, are in large measure allopatric and should be regarded as a species group.

C. bocagei in its various races is now known to show a wing tail ratio varying from 81.9 in the longest tailed (*bocagei*) to 70.1 in *granti* and 68 in *schoutedeni*. *C. isabellae* has not as yet been included in *bocagei* but it is interesting to note that it is allopatric to *bocagei granti* in the Cameroons. *C. isabellae* (tail 66–69 % of wing) has a white stripe over the eye instead of a white anteocular spot found in *bocagei* and also a more contrastingly patterned tail. Another small species, *polioptera* shares the white brow stripe of *isabellae* but not the tail pattern. *C. polioptera* and *C. bocagei* have somewhat overlapping ranges but seem to avoid living together in most if not all places, or occur at slightly different altitudes. These three species thus are evidently closely related and form a species group.

Two further species appear on plumage to be quite unrelated to the foregoing. *C. natalensis* has a reddish brown head and strongly blue wings. *C. caffra* is unusual in having a blue grey abdomen. However in some other respects it is not unlike the *heuglini* group and has a similarly rather long tail, 90 % of the wing. It may therefore be merely an offshoot of the *heuglini* group.

Cossyphicula roberti was originally placed in *Cossypha*, and the grounds for placing it in a monotypic genus are not very strong. In pattern it agrees with *Cossypha*, and although small in size, its tail is 70 % of the wing and thus in agreement with members of the *bocagei* group. Other characters such as the slightly broader bill and small feet seem merely specific. I think it should be kept in *Cossypha*.

Bessonornis was proposed for one species, *humeralis*, which is essentially like a *Cossypha*. Its chief difference is a partial loss of red melanins which has resulted in the forepart of the underside being white instead of rufous and the upperside being grey instead of olive tawny. The rufous rump and tail, and white brow are wholly like *Cossypha*. The tail is long, 94 % of the wing. "*Xenocopsychus*" *ansorgei*, as Chapin has already shown is very like *humeralis* but has lost all rufous in the plumage, leaving a black and white tail. The tail is as long as the wing or slightly longer. I see no reason to retain it in a monotypic genus, I would include both *humeralis* and *ansorgei* in *Cossypha*. With the disappearance of *Bessonornis*, a place must be found for *B. anomala*. I see no obvious reason against transferring it to *Alethe*, and C. W. Benson who knows it well in life agrees with this solution. *B. archeri* which has sometimes been placed in *Cossypha* is considered by Chapin to be close to *anomala*. It should also be transferred to *Alethe* if Chapin is followed, or retained in *Cossypha* as an aberrant species if its position is thought to be nearer to that genus. I prefer to associate it with *anomala* in *Alethe*.

-2 NOV 1961

CONTRIBUTORS

Contributions are not restricted to members of the B.O.C. and should be addressed to the Editor, Dr. J. G. Harrison, "Merriewood", Sevenoaks, Kent. These should be concise and typed on one side of the paper, double-spaced, with a good margin. The first time a species is mentioned, the scientific generic and specific names should be included. Subsequently the same name need only have the initial letter of the genus. Scientific names are printed in italics and should be underlined in the typescript. References should be given at the end of the paper.

Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1961

21st November, 19th December.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent.

nd Section

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB

Edited by
DR. JEFFERY HARRISON

30 NOV 1961
PURCHASED

BRITISH MUSEUM NATURAL HISTORY

Volume 81
No. 9

December
1961

BRITISH MUSEUM NATURAL HISTORY
30 NOV 1961
PURCHASED

BULLETIN
OF THE
BRITISH ORNITHOLOGISTS' CLUB

Volume 81

Number 9

Published: 1st December, 1961

The five hundred and ninety-third meeting of the Club was held jointly with the B.O.U. on Tuesday, 21st November, 1961.

Editor of the Bulletin

Would contributors kindly note the address of Mr. John Yealland on the back of the Bulletin, as he has now taken over the Editorship.

An ovarian tumour in a Mallard

by J. V. BEER AND G. W. STOREY

Received 27th April, 1961

During the winter 1958/59, a female Mallard, *Anas platyrhynchos platyrhynchos* Linnaeus, showing marked abdominal distension was observed amongst the collection at the Wildfowl Trust. For some months it was kept under observation but although having great difficulty with flight it was sufficiently agile to avoid capture and in spite of obvious deformity it appeared to pursue a normal existence. The bird was found dead on 24th February 1959 when it was possible to subject it to examination.

It was fortunate that the duck was carrying a ring from which it was discovered that it was ringed as a full-grown bird on 30th January 1956 thus establishing that it was at least 3½ years old.

Pathological Examination

External examination revealed that it was in fair condition with normal plumage and weighed 1390 grms. There was an obvious abdominal mass.

At post-mortem it was observed that the body showed depletion of sub-cutaneous and visceral fat whilst the blood vessels were distended and prominent.

The heart, which was soft and pale, showed no gross abnormality, while the lungs exhibited congestion. The liver was friable and showed small yellow deposits. There was enlargement of one of the parathyroid glands, which was of a dark brown colour. Small quantities of a serous fluid were present in the body cavities.

The most significant finding was a large tumour arising from the ovary. The tumour, which was non-capsulated and ovoid in shape, measured approximately 12 x 7 cms. and was attached to the ovarian area by a highly

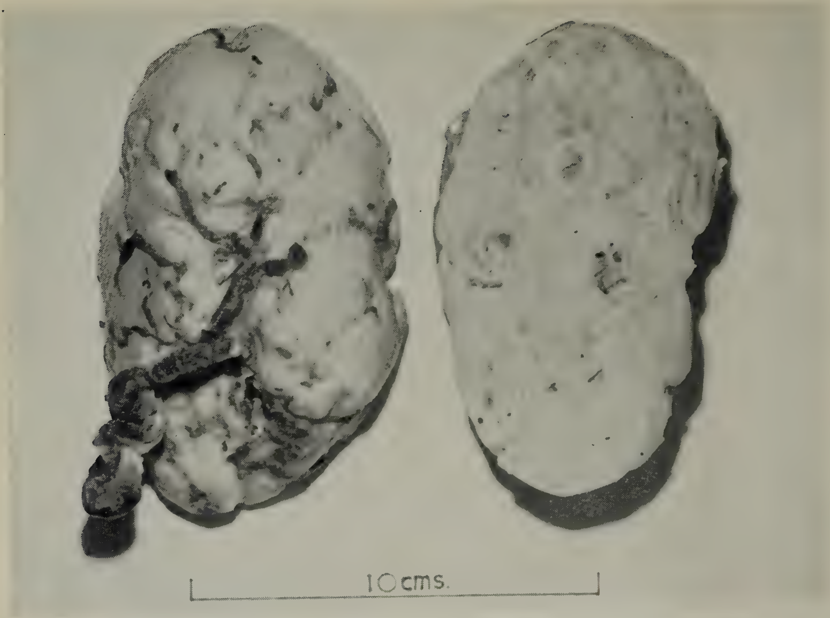

Fig. 1 Ovarian tumour from a Mallard, which has been cut longitudinally, showing the pedicle and the internal structure.

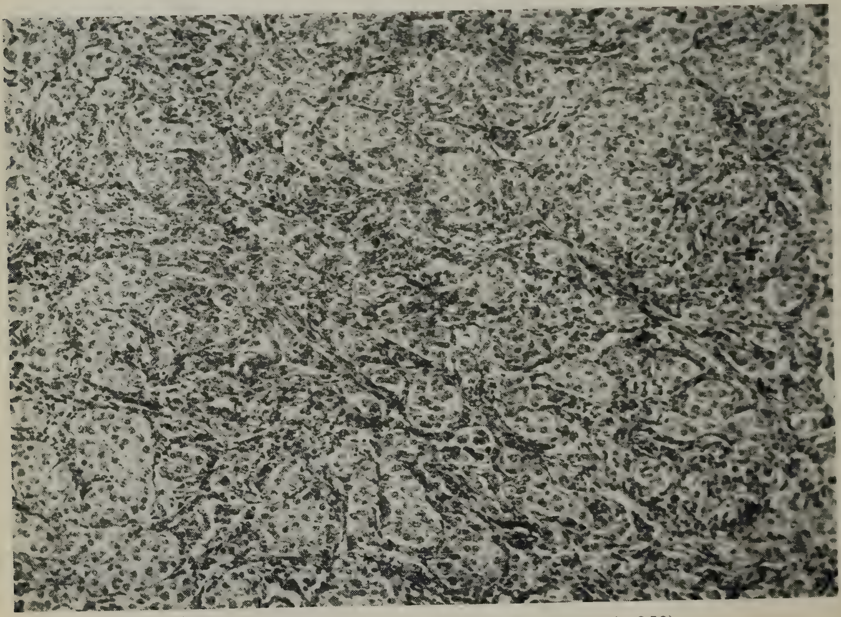

Fig. 2 The cellular structure of the tumour (x 250)

vascular pedicle (Fig. 1). The tumour was white in colour, firm and rubbery in texture, and weighed 400 grms.

There were numerous metastatic nodules up to a few millimetres in size on the peritoneal membrane.

Histology

Sections of the tumour showed it to be a granulosa-cell tumour with characteristic variations in structure. For the most part it consists of (Fig. 2) groups of pale staining rounded or polyhedral cells with a well defined nucleus. There is a well defined fibrous stroma carrying thin-walled blood vessels. In parts, the fibrous trabeculae are more pronounced, whilst elsewhere the cell proliferation is such that one sees large sheets of cells with only scanty interstitial tissue. Occasionally, there is a tendency to papillary formation and also luteinisation, not uncommon findings in such tumours. Degenerative changes are absent and there is little cell atypism. The characteristic ''rosette'' formation which occurs in this type of tumour was not a feature of this particular specimen.

Discussion

Ovarian tumours in birds are described by Willis (1948) who states that their examination in the literature has been both sporadic and superficial.

Feldman & Olson (1959) in their review of ''Neoplastic Diseases of the Chicken'' report that various workers had found an incidence of tumours of from 2 to 27 per cent and, in particular, that Eber & Malke (1932) had found 15 cases of ovarian tumour in a series of 239 (6.4 per cent). The reviewers consider that Seifried (1923) had described a granulosa tumour in the chicken.

The incidence of tumours in captive wild birds would seem to be lower. Lombard & Witte (1959) in 10,240 autopsies carried out at the Philadelphia Zoological Gardens reported the finding of 139 cases—an incidence of 1.4 per cent. In this series, in which there were 1081 autopsies on the Anseriformes, only three cases showed carcinomas of the genital tract, one of these being an ovarian carcinoma in a Bahama Pintail, *Anas bahamensis* Linnaeus. Jennings (1959b) reported a series of 680 autopsies on the Anatidae in which he found four cases of tumour and cyst (0.6 per cent) but no ovarian tumour.

In free-living wild birds the incidence of tumours is similarly low. In a series of 734 post-mortems, Jennings (1954, 1955 and 1959a) and Jennings & Soulsby (1956 and 1957) reported four cases of tumour and one case of an ovarian cyst in a Black-headed Gull, *Larus ridibundus* Linnaeus (0.7 per cent), while McDiarmid (1956) and Keymer (1958) only reported two cases, neither of which involved the ovary. From the literature the ovarian tumour would appear to be uncommon.

The low incidence of tumours in wild birds may be due, in part at least, to the relative short life-span of the birds (McDiarmid 1956). Lombard & Witte (1959) noted that an increase of incidence of the disease in captive wild birds paralleled the increased exhibition period which had resulted from improved feeding. The picture is further complicated in the case of free-living wild birds by a relative lack of fresh material, when the frequency of diagnosis would be expected to be lower than in captive birds.

The authors have not discovered any reference to a tumour of the type described occurring in the Anatidae. The tumour is a typical ovarian carcinoma of the granulosa-cell type which showed extensive peritoneal metastasis. A healthy duck of this species and age would weigh approximately 1100 grms. based on its linear measurements (Beer, unpublished data), thus indicating a significant degree of malignant cachexia which undoubtedly resulted in death.

Summary

A malignant ovarian tumour of granulosa-cell type is reported occurring in an adult female Mallard. Comparison is made with the occurrence of tumours in the chicken and in other birds both captive and wild.

Acknowledgements:

The authors wish to thank Professor R. A. Willis for confirmation of the histological diagnosis.

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Further breeding records from Northern Rhodesia (No. 2)

by C. W. BENSON AND CAPTAIN CHARLES R. S. PITMAN

Received 1st May, 1961

INTRODUCTION

The present paper is a corollary to that by Benson and Pitman (1958–59). As previously, data are only included for those species for which they are scanty or lacking in Benson and White's Check List (1957). Eggs recorded as collected are in the British Museum, unless otherwise indicated, while any parents or young birds so recorded are in the National Museum, Bulawayo. Co-ordinates are given for any locality, the position of which is not indicated in the Check List. The nomenclature of that work is followed. We are most grateful to the various persons whose names are mentioned below, in the appropriate context, for information and/or specimens.

SYSTEMATIC LIST

Ixobrychus minutus payesii (Hartlaub).

Coll. nestling, 23rd April, 1960, Chilanga, caught locally, brought to C. W. B. It is in pale rufous buff down, except for a few dark brown feathers margined with rufous starting to appear on the mantle and wing-coverts. The outer toe is slightly shorter than the inner toe, as is characteristic of the Botaurinae (Bock, *Amer. Mus. Novit.*, 1779, 1956: 12).

Ciconia nigra (Linné).

B. L. Mitchell observed a young bird in the sandstone gorges, on the north side of the Zambesi, below the Victoria Falls, at 26° 40′ E., on 20th July, 1959. It was able to fly weakly, but allowed approach to within 30 feet, and could not have been more than about two months old.

Anastomus lamelligerus lamelligerus Temminck.

W. D. C. Brickhill observed a colony of over 100 nests, in reeds bordering a small lake in the Bangweulu Swamps, in July, 1958. The nests were flimsy platforms made of sticks and grass. Some contained eggs, others very small young.

According to T. Keynes, there was a colony of hundreds of nests in reeds near the Machili/Zambesi Confluence, in May, 1959, some containing eggs, others recently hatched young. By the end of June the young that had survived had flown, though in the meantime heavy toll had been taken of them by local Africans.

Bostrychia hagedashia brevirostris (Reichenow).

V. J. Barnett found a nest near Livingstone, on the Zambesi above the Victoria Falls, on 21st November, 1959. It was a platform of diameter not more than 15 inches, made of sticks, in a tree overhanging the river, about 10 feet above water-level. It contained one chick covered in fine black down, considered to be about four days old, and one egg.

N. J. Carr and J. M. C. Uys found a nest on the Kafue at 14° 38′ S., 26° 11′ E., on 15th January, 1960. It was a frail, thin platform, of diameter only about eight inches, made of fine twigs, without any lining, in a *Syzygium guineense* tree overhanging the river, and about four feet above water-level. It contained two chicks, in dull black down, with a little white tipping on the throat, and some feathers starting to emerge from sheath in the area of the wings.

Neophron monachus pileatus (Burchell).

Mitchell found a nest containing a single chick about two weeks old, in the Kalomo District at about 17 S., 26 E., on 20th August, 1959. The nest was about 15 feet up in a small Acacia tree, on an unburnt open plain. Pellets found in the vicinity contained hooves of a newly born calf both of a Common Duiker (*Sylvicapra grimmia*) and a Sharpe's Grysbok (*Raphicerus sharpei*), and the false hoof of a Reedbuck (*Redunca arundinum*), the hairs of all three of these species, and the remains of two rats.

B. Donnelly and C. W. B. found a nest containing a single chick, at the Ngambwe Rapids, on the Zambesi, on 27th August, 1959. The nest was 35 feet above the ground, in riparian forest. The chick was still completely in brown down, about seven inches in length, and adjudged to be one week old.

Elanus caeruleus caeruleus (Desfontaines).

Coll C/3 fresh, 3rd June, 1959, edge of Kafue Flats, on Lochinvar Ranch (Mitchell). Eggs dull surfaced, white, thickly smeared all over with burnt umber and/or permanent brown, on a few obscured greyish blotches; size 38.0 x 30.5, 37.0 x 31.0, 41.0 x 30.3 mm. Nest five feet up, in a sapling of *Acacia sieberiana*.

Mitchell also saw a nest near Livingstone on 21st June, 1959, 35 feet up in an *Acacia albida* tree. There were two young, barely fledged, on the edge of the nest, while one of the parents was at the top of the tree, plucking fur from a rat, apparently a *Mastomys natalensis*.

Accipiter melanoleucus melanoleucus Smith.

Coll. nestling, 2nd October, 1960, Fort Jameson (V. J. Wilson). This specimen was taken from its nest in the top of a *Brachystegia manga* tree, when almost fully fledged, its one companion managing to fly away. It was kept in captivity until 4th February, 1961, when it died. It is still completely in immature plumage. Another such specimen has been examined by C. W. B., shot by C. S. Holliday at Livingstone on 25th March, 1960, in the Rhodes-Livingstone Museum.

Circus aeruginosus ranivorus (Daudin).

Coll. C/3 fresh with female parent (with no more eggs to lay), 5th March, 1961, Choma District at 16° 39′ S., 27° 01′ E. (W. F. Bruce-Miller). The nest was in a swamp, one foot above water-level, a platform of coarse grass and reeds, with finer grass on top. Eggs white, smooth without gloss, nest-stained, green inside; size 46.8 x 36.3, 45.3 x 34.9, 48.6 x 36.3 mm. On 3rd March there were only two.

C. W. B. saw a pair copulating in a low bush on the edge of a swamp near Kalomo on 8th January, 1958. Later the same day, one of the pair was flushed from a half-completed nest.

Actophilornis africanus (Gmelin).

There are definite egg-laying records in the Check List for February, May, June and December. Recent records, details of which it is unnecessary to give, indicate egg-laying in the following months:— January, one record; February, one; March, two; April, one; July, one; August, one; November, one. It is evident that this species has no marked breeding season, and this is supported by Nyasaland records (see Benson's check list, 1953), while R. K. Brooke has provided the following up-to-date information for Southern Rhodesia:— January, four records; February, four; March, six; April, one; May, nil; June, one; July, nil; August, six; September, one; October, one; November, six; December, four.

Microparra capensis (Smith).

C. W. B., in the Busanga Swamp (not Busango, as spelt in the Check List), 24th June, 1960, observed an adult accompanied by three young not more than three-quarters of its size. It may be assumed that they were from eggs laid in early May.

Charadrius tricollaris tricollaris Vieillot.

Coll. C/2 fresh, 17th June, 1960, Chilanga (C. W. B.). The first egg was laid on 13th June, and presumably this was a full clutch. They are smooth and dull surfaced, pale cream, much obscured by short fine lines and confluent smears of sepia, concentrated in a small cap at the top, in a 5 mm. broad zone near the top, and in another slightly broader zone towards the middle of each egg, on almost obscured light grey, mainly in an underlying girdle around the top; size 29.1 x 22.0, 29.2 x 22.3 mm. They are in fact typical of this species, and see Serle (*Bull. Brit. Orn. Cl.*, 76, 1956: 79).

Additional breeding records are as follows:— C/2, 22nd September, 1953, Lukusuzi Game Reserve (R. I. G. Attwell); single young birds only about four days old, 28th and 29th August, 1957, in separate localities near Chilanga (C. W. B.); two separate C/2, 6th and 11th September, 1958, Mwekera, near Kitwe (G. Bell-Cross); C/2, 20th September, 1960, Nsefu (C. J. Vernon).

Gallinago nigripennis angolensis Bocage.

Coll. two C/2, 8th June and 11th June, 1944, Ndola, both with female parents, one egg of first clutch fully shelled but not yet laid, second clutch partly incubated (E. L. Button). The parents have culmen (exposed) 96, 95 mm. respectively. The eggs of the first clutch are pyriform, smooth, with slight gloss, light warm sepia, boldly spotted and blotched warm sepia and raw umber—in one egg a broad girdle around the top—on underlying dull grey and light brownish grey; size 40.8 x 30.4, 40.4 x 30.0 mm. Those of the second clutch are more ovate than pyriform, and narrowing at one end, light stone-brown, very boldly marked, mainly around the larger end, with large twisted confluent blotches and spots of shades of warm sepia, on underlying light grey and pale brownish grey, on one of the eggs also bold markings of raw umber; size 41.3 x 30.5, 42.3 x 30.5 mm.

Benson (1959) records a C/2 from the Kafue Flats, and (*Ann. Trans. Mus.*, 21 (2), 1949: 164) a C/1 from northern Nyasaland, both being complete clutches.

Burhinus capensis capensis (Lichtenstein).

Attwell found a clutch of two eggs on 25th September, 1960, at Kafwala (14° 50′ S., 26° 10′ E.), in short grass by the edge of a motor-track through Brachystegia woodland. By 6th October one egg had hatched, and twenty-four hours later both had. Uys observed two chicks, still mainly in down, but with wing-feathers just starting to emerge from sheath, on 9th October, 1960, at Ntemwa (14° 22′ S., 26° 02′ E.) on recently burnt bare ground, on the edge of Brachystegia woodland. Mitchell saw two chicks still completely in down, not more than a week old, on 6th November, 1960, at Moshi (14° 24′ S., 26° 10′ E.), in Brachystegia woodland, on ground over which a fierce fire had raged only the previous night. They were quite unharmed, and the question poses itself as to how they had survived.

Larus cirrocephalus Vieillot.

Coll. C/3 fresh, 4th August, 1960, near Ncheta Island, Bangweulu Swamps (Brickhill). Eggs on a pad of grass on a pile of excavated material by an artificial channel 40 feet wide, one foot above the water-level, and no other nests in the vicinity. One egg was broken and thrown away. Of the other two, both are smooth surfaced, with very slight gloss. One is pale olive-green, sparingly and irregularly marked with raw umber all over, on underlying violet-grey. The other is pale *terre verte*, boldly and very sparingly blotched, mainly at the top of the large end, with sepia and light warm sepia, on underlying pale grey. Size 54.0 x 37.3, 54.2 x 36.3 mm.

E. A. Zaloumis had a young bird brought to him on the Zambesi 12 miles downstream from Mwandi, in July, 1959. It still had some down adhering, and was only able to fly very weakly.

Pterocles gutturalis gutturalis Smith.

Coll. fully shelled oviduct egg, with both parents, 11th August, 1960, Munte Plain, 14° 00′ S., 25° 30′ E. (W. F. H. Ansell). The egg is smooth and fairly glossy, light brown, sparingly spotted and speckled light umber, more thickly at the top of the large end, and with a 'girdled' appearance, on underlying violet-slate, also mainly in a zone around the top; size approximately 43.5 x 33.3 mm. It closely resembles eggs of this species from Oldeani, Tanganyika. The female also contained an oocyte of diameter 24 mm.

The stomach-contents of the parents consisted of seeds only, among which A. Angus, Plant Pathologist, Department of Agriculture, Northern Rhodesia, has identified the following after germination:— legumes, *Sesbania* sp. (trace only), *Crotolaria* sp. and *Cassia* sp.; weed, *Achyranthes aspera* (trace only); grasses, *Leersia hexandra* and *Rottboelia exaltata* (traces only of both); blackjack, *Bidens* sp.

Records by Benson (1959, 1960, and *Occ. Papers Nat. Mus. S. Rhod.*, 3 [24B], 1960: 245) indicate egg-laying during June/October. To these may be added the following:— Kafue Flats, 12th June, 1955, nest with three eggs (Lt.-Col. R. A. Critchley); 17th September, 1957, two young not yet able to fly, less than half the size of their parents (Uys): Moshi (14° 24′ S., 26° 10′ E.), 8th September, 1960, three very small chicks, only a few days old, of which by 4th October only one survived, by then about half the size of its parents, but able to fly (Attwell & Uys).

W. F. Bruce-Miller states that on his farm near Choma the odd individual may be seen at any season. But it is mostly in evidence in November, when flocks of 50 or more may be seen flying southward at a height of up to 1,000 feet, in the heat of the day, calling continuously. Occasionally a few individuals will descend to drink at his dam, and then move on south again. See also Benson (1959), re its presence on the Kafue Flats only from late April to October. G. C. R. Clay, who has many years experience in Barotseland, has seen it only the once there, near Kalabo, during the dry season, and cannot credit that it occurs on the Barotse Plain in the rains, as recorded in the Check List, since practically the whole of the plain is then under several feet of water. It would appear that it is no more than a straggler to Barotseland, and we are unaware of any records from Angola.

Pterocles bicinctus bicinctus Temminck.

Coll. C/3 dead fresh, with female parent, wing 167 mm., 26th July, 1960, in stony, hilly Brachsytegia woodland, 15 miles north-east of Livingstone (V. J. Barnett). One egg was broken. The other two, which have been returned to the collector, are smooth and slightly glossed, pale pinkish brown, finely speckled all over, one very sparingly, with light raw umber, on underlying rather bolder markings of light violet-grey in one, even bolder of pale grey in the other; size 37.3 x 26.4, 38.5 x 26.3 mm. They are not unlike eggs of *P. quadricinctus* collected by C. R. S. P. near the Kerio River, to the south of Lake Rudolf.

P. S. Morris saw a pair in the Luangwa Valley (Petauke District) on 16th September, 1960, with three chicks still quite unable to fly.

Chrysococcyx caprius (Boddaert).
A fledgling, the tail of which was sent to C. W. B. for identification, was shot by L. R. Evans at Serenje on 23rd March, 1958, while being fed by an *Oriolus larvatus*.

Tauraco corythaix schalowi (Reichenow).
C. W. B. observed a bird incubating a single egg near Chilanga on 8th December, 1957. The nest was near the top of a Bauhinia tree 15 feet high Another nest was observed in this locality between 15th and 23rd January, 1960, when two eggs were being incubated. It was in a mango tree, 15 feet above the ground. T. C. L. Symmes observed a nest near Lusaka between 9th and 17th January, 1960. This also contained two eggs, and was in a Bauhinia tree, 12 feet above the ground. Mrs. H. Tait saw a nest containing two well feathered young at Isoka on 1st February, 1961.

Musophaga rossae Gould.
C. J. Vernon found a nest at Kasama on 14th September, 1958. It was a large dove-like platform of sticks on the edge of a patch of evergreen forest, 12 feet above the ground. It contained one egg, and on the 18th two. On 6th October one egg was chipping open, and the following day both were doing so. The eggs were pale cream in colour.

It is appropriate to expand the record of egg-laying at Kalulushi in October by L. L. Muir, summarised in the Check List. A nest was found by him in dense riparian forest, 10 feet above the ground, on 22nd October, 1955. It was a fair sized platform of sticks and twigs. It contained two white eggs, approximate size 41 x 38 mm.

Tockus erythrorhynchus rufirostris (Sundevall).
In the Luangwa Valley at 12° 30′ S., 32° 20′ E., on 26th March, 1958, Attwell watched a male bringing food (mostly orthopteran) throughout the day to a nesting hole in a tree of *Colophospermum mopane*, nine feet above the ground. The open part of the hole consisted of a slit measuring $1\frac{3}{4}$ inches vertically and $\frac{3}{8}$ inch wide. The slit was mudded all round for about one inch. Unfortunately, when the site was re-visited two weeks later, it was found that the tree had been destroyed by elephants.

Scotopelia peli Bonaparte.
T. Edelman observed a bird at its nest, a shallow platform of sticks containing one egg, on the edge of the Kariba Lake, 25th February, 1959. The nest was only five feet above the level of the rising flood, and would shortly have been inundated.

Apus caffer streubelii (Hartlaub).
Coll. nestling, 30th December, 1959, Chilanga (C. W. B.). This specimen is fully feathered, and has wing 115 mm. It was found on the floor of the verandah of M. A. E. Mortimer's house, after the nest (an old one of *Hirundo abyssinica*) had disintegrated. A broken fresh egg had been found below the nest on 3rd October, while twittering from the interior of the nest was first heard on 29th November. A pair of adults had been around the house regularly since the previous February.

R. M. Cary (communicated by J. M. Winterbottom) found an old nest of *Hirundo abyssinica*, containing three eggs of this swift—C/2 is usual—near the Kafue Bridge (Lusaka District) on 30th November, 1949.

Motacilla clara torrentium Ticehurst.

A. J. Tree found a fresh completed nest, in which no eggs had yet been laid, on the Kawanga River, at 15° 42′ S., 28° 36′ E., on the Zambesi scarp, on 30th August, 1960. It was on a small ledge, under an overhang of rock, four feet above water-level. He found another nest in this locality on 27th September, 1960, containing two eggs. It was placed behind a protruding root, on a bank three feet high, two feet above water-level.

E. L. Button collected an immature specimen, still under parental care, tail 68 mm. only, on the Kabompo River at 11° 53′ S., on 10th November, 1960. C. W. B. has compared it with specimens from Southern Rhodesia and eastern Northern Rhodesia, lent by M. P. Stuart Irwin from the National Museum, Bulawayo. It is darker above than the great majority, and may be better placed with *M. c. chapini* Amadon (*Amer. Mus. Novit.*, 1656, 1954: 4). The only other records of this species from the North-Western Province are from G. Bell-Cross, who saw one on the Kabompo at 12° 04′ S., on 27th July, 1960, while White has seen it at Mwinilunga.

Benson (*Occ. Papers Nat. Mus. S. Rhod.*, 3[24B], 1960: 347) records gonad-activity in a pair collected in the Mazabuka District in September (eastern co-ordinate shown incorrectly as 26° 08′ E., instead of 28° 08′ E.). The only record in the Check List is of egg-laying in October. All records point to dry season breeding, and it might be supposed that breeding in the rains, with the danger of nests being flooded out by rivers or streams in spate, would be avoided. However, there is a Nyasaland record of egg-laying in March, as well as in August/October (Benson's Check List, 1953). R. K. Brooke has provided the following up-to-date egg-laying records for Southern Rhodesia:— August, one record; September, two; October, one; November, two. The last two are from the very humid Melsetter area, and can certainly be taken as wet-season records. Moreover, Moreau (*Fest. Stres.*, 1949: 183) states that in the Usambara Mts. nesting takes place at any time of the year, and that the "long rains" of April and May are not avoided.

Chlorocichla flaviventris occidentalis Sharpe.

Coll. C/2 fresh, 8th November, 1960, Lusaka District at 15° 40′ S., 28° 37′ E. (C. W. B.). Nest on edge of riparian forest, eight feet above the ground. Eggs white, smooth, with slight gloss, with a marbled appearance, very boldly blotched all over with concentrations (confluent at large end) of warm sepia shades, with light and pale raw umber fine streaking and speckling, on underlying light and pale grey, mainly at the large end; size 24.6 x 17.0, 25.2 x 17.2 mm.

Muscicapa boehmi (Reichenow).

At Isoka, 2nd November, 1960, Mrs. Tait saw young being fed in an old nest of *Anaplectes melanotis*. A week later, they had apparently left, but on 12th December young were again being fed in the same nest, and on 28th December three fledglings under parental care were seen nearby.

Turdus olivaceus stormsi Hartlaub.

Coll. C/2 fresh, with female parent (with no more eggs to lay), 20th

September, 1960, Luela River at 11° 57′ S., 28° 52′ E. Nest a cup made of rootlets and tendrils, up to 2 mm. thick on the outside, less than 1 mm. on the inside. There was much dried mud at the base and in the walls. Dimensions: external diameter 140, internal 85 mm.; external depth 95, internal 50 mm. Nest 15 feet above the ground in the lateral fork of a tree, in thick riparian forest. Eggs smooth, with slight gloss, pale caerulean blue, one tinged greenish. The blue egg is very scantily marked with a few small spots and specks of raw umber and some small paler smears. The other egg is sparingly spotted all over with pale burnt umber, with a zone of bolder markings around the top, on underlying very sparse spots of pale violet. The nest of this form seems to have only previously been found near Elisabethville (Vincent, *Ibis*, 1947: 189).

Psalidoprocne albiceps Sclater.

Vernon opened up a nesting tunnel, extending into a small prospector's pit-wall for about 18 inches, in Brachystegia woodland at Kasama on 3rd January, 1959. It contained a single fresh egg, on a pad of lichen and grass, on top of what was apparently a previous year's nest. Building was also seen at another similar site on 29th November, 1958.

Corvus albicollis Latham.

Tree found a single well developed nestling, on a ledge on a limestone cliff, on the Zambesi scarp at 15° 41′ S., 28° 31′ E., on 24th October, 1960. It was not yet able to fly at all, and the shoulders were still in down.

Onychognathus morio morio (Linné).

Coll. C/3 heavily incubated, 10th December, 1959, from a cliff-face at Msoro, Fort Jameson District, at 13° 36′ S., 31° 54′ E. (V. J. Wilson).

Mitchell saw two young only just fledged, being fed by their parents, in the gorges adjacent to the Victoria Falls, on 3rd May, 1959.

Nectarinia verticalis viridisplendens (Reichenow).

Mrs. Tait reports seeing a fledgling, still with a marked yellow gape-wattle, being fed by its parents at Old Fife on 6th April, 1960.

Nectarinia olivacea lowei (Vincent).

Coll. C/2 heavily incubated, with female parent, 26th October, 1960, Samfya (C. W. B.). One egg was lost. The other, which is badly broken and impossible to measure accurately, is smooth, with slight gloss, pale brown, heavily marked with sepia clouding, with a zone of darker spots around the top of the large end, above a broad brown zone. The nest was in a patch of evergreen forest, six feet above the ground.

Pytilia afra (Gmelin).

Coll. C/5 heavily incubated, with male parent, 2nd March, 1960, Chilanga (C. W. B.). One egg is larger than the other four, and was rather more fresh. It measures 18.1 x 13.8 mm., and is attributed to *Vidua paradisea*.

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New name for *Estrilda jamesoni benguellensis* Delacour

by MELVIN A. TRAYLOR

Received 5th May, 1961

In his 1943 revision of the Estrildinae, Delacour (1943, Zoologica, 28: 84) united the genera *Lagonosticta* and *Estrilda* and in so doing created a number of secondary homonyms. For one of these, *Estrilda jamesoni ansorgei* (*Lagonosticta rhodopareia ansorgei* Neumann, 1908, *Bul. Brit. Orn. Club*, 21: 58) preoccupied by *Estrilda shelleyi ansorgei* (*Pytelia ansorgei* Hartert, 1899, *Bul. Brit. Orn. Club*, 10: 26), he proposed the name *Estrilda jamesoni benguellensis*. Unfortunately this name is preoccupied by *Estrilda paludicola benguellensis* Neumann, 1908, *Bul. Brit. Orn. Club*, 21: 96. I, therefore, propose as a new name for *Estrilda jamesoni benguellensis* Delacour:

Estrilda jamesoni kabisombo nom. nov.

The name *kabisombo* is taken from the type locality of the race, Kabisombo River, Huila, Angola.

Notes on African species of Turdus

by C. M. N. WHITE

Received 8th March, 1961

1. *Inter-relationships in the Turdus olivaceus, abyssinicus, pelios complex.*

There has been considerable fluctuation of opinion about the inter-relationships of these thrushes, the number of species to be recognised, and where to attach some of the named geographical forms. Chapin (1953) proposed to arrange them in two species, *olivaceus* including *pelios*, and *abyssinicus*. The latter was regarded as comprising the montane thrushes of tropical East Africa. It appears that in fact one is faced with a group of very closely related birds which could be regarded as forming a single species but for the fact that two quite distinct forms now occur in places together as good species. Some quite different forms are linked by intergrading series, whilst no intergradation is known between others.

The intergrading series run northwards from Angola and Northern Rhodesia extending to Senegal in the west and to Eritrea in the east. This series comprises about seven subspecies. They are certainly a graded clinal series becoming paler in the north of their range, and often by convergence closely resembling superficially *T. libonyanus*, and in places occupying a savanna niche where *libonyanyus* does not occur. They cannot be regarded as conspecific with *libonyanus* for they have yellow rather than deep orange red bills, finely streaked instead of plain throats, and in the Katanga and Northern Rhodesia *libonyanus* and "*pelios*" *stormsi* live together. The *pelios* thrushes can likewise not be regarded as conspecific with *abyssinicus* for they also overlap in various places, sometimes with a partial ecological and altitudinal replacement, sometimes actually living side by side. The chief question is therefore whether *pelios* is to be treated as a species, or to be attached, as Chapin proposed, to *olivaceus*.

At first sight there seems to be good reason for this since *stormsi* and *olivaceus* are very similar, and the latter is in fact apparently a *stormsi* with more melanin, giving it a much more dusky olive upperside, a dusky olive breast contrasting with the rufous abdomen very sharply instead of merging into it, and a darker rufous abdomen. The objections to treating *olivaceus* and *pelios* as conspecific are two. Firstly *olivaceus* is geographically widely separated from *pelios;* from the north Transvaal to northern Northern Rhodesia there is no representative, for *swynnertoni* of the montane forests of east Southern Rhodesia is one of the *abyssinicus* group of thrushes. This gap in distribution is not a fatal barrier to treating the two as conspecific when the overall resemblance of *olivaceus* to *stormsi* is considered. More difficult however is the even greater resemblance between some of the southern *olivaceus* and members of the *abyssinicus* group. Thus I find *T. a. bambusicola* an almost perfect replica of *T. o. pondoensis* differing in little more than its more olive, less dusky back. Similarly nominate *abyssinicus* and *T. o. smithii* are almost exactly alike except for the greatly reduced rufous on the abdomen in *smithii.* On the whole members of the montane *abyssinicus* group also have blacker lores and orbital regions than the *pelios* group, and *olivaceus* whilst somewhat intermediate is often as black there as some *abyssinicus.* Thus the southern *olivaceus* are in fact at least as similar to some of the *abyssinicus* group as they are to the *pelios* group. The southern *olivaceus* do not intergrade with either *pelios* or *abyssinicus* owing to gaps in ranges; the resemblance between *pelios* and *olivaceus* is greater than that between *abyssinicus swynnertoni* and *olivaceus*, although the latter are geographically closer to each other. On a purely subjective judgment one would conclude that *olivaceus* could interbreed equally easily with *pelios stormsi* or with the *abyssinicus* forms noted above. In my view it is logically impossible to attach *olivaceus* either to *pelios* or to *abyssinicus* since it appears equally closely related to certain forms of both. Under these circumstances it seems best to treat *olivaceus* as specifically distinct from either.

2. *The components of the T. abyssinicus group.*

Variation in this species consists of partly random and non-clinal variation between isolated populations. From Ethiopia to Kenya and south west to Kivu and Mt. Kabobo the populations have rufous abdomens (*abyssinicus*, *baraka*, *bambusicola*); the rufous on the underside largely disappears in most of the East African montane forms (*oldeani*, *deckeni*, *milanjensis*, *nyikae*). It reappears to some extent though in a more ochreous than rufous shade in *swynnertoni* in Southern Rhodesia. I consider the following, of whose position there has been difference of opinion, forms of *T. abyssinicus.* (a) *helleri*, which only differs in having a black head. (b) *ludoviciae*, which is a grey form without rufous below. Always hitherto treated as a separate species, this bird appears to be merely a very distinct form of *abyssinicus.* (*c*) *menachensis.* (d) *nigrilorum* and *poensis.* Chapin attached this pair to his *olivaceus* which included *pelios.* However in the Cameroons *pelios* and *nigrilorum* occur quite close to each other without intergradation, just as *pelios* and *abyssinicus* do in the eastern Congo and Ethiopia. A large part of the Cameroon mountain avifauna is derived from, and very closely related to that of the East African mountains which would suggest that *nigrilorum* is a form of *abyssinicus.* The pronounced black loral region seems to confirm this, since it is characteristic of most forms of *abyssinicus.* There is no obvious reason for treating *nigrilorum* as anything but a form of *abyssinicus.*

3. *Turdus libonyanus.*

The opportunity of examining a very large series of this species from South and Central Africa has given me the opportunity to reconsider the geographical variation about which there has been much difference of opinion in recent years. Over the greater part of the range this is very slight, and I cannot find any constant differences between nominate birds from the Transvaal and long series from Southern and Northern Rhodesia and Nyasaland. Some are slightly warmer and richer than others, and this is perhaps more common in the north of the range, but there is no constant difference to justify the separation of *niassae* from *libonyanus*.

No doubt has been cast upon the validity of the pale *verreauxi* and this form extends into south west Barotseland and the Caprivi Strip where the population is unstable. *T. l. chobiensis* is based upon these unstable populations of that area. North of the Zambezi opposite the Caprivi the population in Sesheke and up stream from the Victoria Falls is not however *verreauxi* but proves to be identical with nominate *libonyanus*.

The south east of the species' range presents exceptionally interesting variations. *T. l. peripheris* Clancey is indeed a very saturated form as Clancey claimed, although an occasional specimen from elsewhere may match it in this respect. A short distance further north in southern Portuguese East Africa *tropicalis* is almost as pale as *verreauxi* but has more rufous flanks although they are lighter than in the nominate form. In view of the great uniformity of populations over most of the large range of this thrush, the juxtaposition of two contrasting extremes in this area is remarkable, and both *peripheris* and *tropicalis* should be recognised on the characters given.

4. *Turdus litsipsirupa.*

Examination of long series shows beyond any doubt that Clancey's form *pauciguttatus* is well founded both on the sparser spotting of the underside and the paler and purer grey, less brownish tinged upperside. Birds from Barotseland do not however show these characters and seem to be the nominate form. The difference between the nominate form and *stierlingi* are very slight. Neither denser spotting nor buffier underside are sufficiently marked to justify its recognition, but it can be upheld on its generally shorter bill.

I am greatly indebted to the National Museum, Bulawayo and to the Durban Museum for the loan of material of these thrushes, and to Mr. C. W. Benson for examining them with me.

Notes on *Oenanthe pileata* (Gmelin)

by C. M. N. White

Received 24th April, 1961

There are two topics of interest concerning this wheatear—its geographical variation and its migratory movements. The two should be considered together, but the latter has received little attention; the geographical variation has been discussed several times with scanty agreement as to what distinguishes the two forms which have been generally accepted (*pileata* and *livingstonii*).

Most writers consider that *livingstonii* is smaller than the nominate form, and Chapin (1953) quotes no other difference. Undoubtedly birds from north of the Limpopo average smaller, but since wing measurements overlap (males of *livingstonii* 90–97 against 91–104 in *pileata*) this is insufficient for formal separation. *Livingstonii* is said by some writers to have less white on the forehead, but this character seems to me to be quite inconstant and a matter of individual variation. Macdonald (1952) reported differences in the colour of the upperside; *livingstonii* was said to be more sepia, less warm fawn above, whilst a new form, *neseri*, was said to be lighter and more drab grey, less sepia, than *livingstonii*. However there is doubt about the range and characters of the new form. In 1956 the S.A.O.S. List Committee considered that birds from most of the range of *neseri* are inseparable from *livingstonii*, and in 1959 Clancey claimed that *neseri* is really a dark and not a pale form. In 1934 Lynes had observed that birds from Iringa were unusually dusky above but others from Kenya quite light.

I have not re-examined specimens of *neseri* but have had available good series of the nominate form and of *pileata*, and do not find these supposed colour variations at all constant. As with all wheatears wear and abrasion produces rather marked changes. I agree with McLachlan and Liversidge that this makes worn *livingstonii* often rather greyer and less warm than the nominate form, but it is impossible to judge how far this is due to different effects of actinic action in different parts of the range. A single bird from Hanang in Tanganyika shows the rather dusky upperside noted by Lynes for his Iringa birds. The fact that Macdonald and Hall (1957) refer Kaokoveld birds to *neseri* whilst the S.A.O.S. List Committee refer the same birds to *livingstonii*, and that Macdonald regarded *neseri* as a pale form, whilst Clancey regards it as a dark form, shows that there is a considerable subjective element in the assessment of supposed colour differences. Mr. Benson who examined these birds with me shares my own view that no clear cut colour differences can be used to distinguish subspecies. I consequently believe that a binomial designation is preferable at present.

This decision is not however based solely upon the doubt as to whether colour differences of a sufficiently constant degree exist. *O. pileata* is a bird of migratory habits over much of its range. The Check List of Birds of the S.W. Cape (1955) state that it is resident there; McLachlan and Liversidge describe it as resident throughout southern Africa except in the south east coastal areas where it is uncommon during the colder months. This last statement is not in fact strictly true for in Southern Rhodesia it is a dry season visitor from mid May to November. This migratory habit with similar dates is equally true for Northern Rhodesia, Nyasaland and the Katanga. The non breeding quarters of these dry season breeding visitors to central Africa is not known, but birds in post juvenile and post breeding moult have been collected in Tanganyika on dates when the species is absent from Northern Rhodesia, and birds collected in South West Africa from December to early May illustrate the transition from worn to fresh plumage following breeding. Either of these series both in terms of dates and of moult could thus represent the breeding populations of central Africa. However the species also breeds in East Africa and Jackson has recorded two breeding seasons in Kenya, one of which April–June overlaps the central African breeding period, whilst the other (December and January) is a period when *pileata* is absent from central Africa.

There is of course no reason why defined subspecies of this wheatear should not be delineated in due course. The different populations certainly exhibit physiological differences since they are resident in the south western Cape, highly migratory over a great area of central Africa, and are presumably resident and have a double breeding period in Kenya. On account of the migratory habit over a wide area, non breeding birds or birds in post juvenile and post breeding moult collected in other parts of the total range cannot be assumed to be breeding birds of the locality in which they are collected. Clancey has drawn attention to anomalous specimens in South Africa which he suggests are migrants from other areas. This is possible; equally they may be aberrant individuals of a local population since individual variation is high. Consequently I believe that further light must be thrown on the winter quarters of the central African birds before any sound analysis of geographical variation can be attempted.

I am indebted to the National Museum, Bulawayo for the loan of a long series of specimens, and to Mr. C. W. Benson for examining them with me.

Albinistic patterning in the Mallard, Muscovy, Mandarin and Salvadori's Ducks

by James M. and Jeffery G. Harrison

Received 10th April, 1961

There appear to be certain latent recurring albinistic characters in some species of the *Anatidae*, which exhibit a linked association in some individuals. These characters show a constant symmetrical pattern, which argues that they are not just haphazard instances of the pied state, such as one would expect to result from the mating of a white with a normal individual; from such a mating the progeny usually exhibit pied mosaics and may be classed as accidental variation.

Illustrating this note are shown five instances of the condition in the Mallard, *Anas platyrhynchos platyrhynchos* Linnaeus, all of which are drakes. From these it is apparent that the condition is one of a varying degree of three distinct characters and that in all but the minimal, strikingly symmetrical white wing-tips combine to produce a remarkable variant.

The characters presented by the five specimens shown range from an entirely normally coloured individual (Fig. 1.[1]) except for the presence of a small white chin spot; the white semi-ring of the neck, which is such a familiar character of the Mallard drake is of normal extent. From this stage the variant passes through that condition shown by the next specimen (Fig. 1.[2]) in which both of these characters are seen in a more extensive form, and in which the longest, but not all of the primaries, are white. The next stage presents as an individual in which the chin spot and the white at the root of the neck are beginning to coalesce (Fig. 1.[3]), and in which all the primaries are white and part of the alula. From this stage the next (Fig. 1.[4]) is reached in which the lower half of the neck is white, and in the wings not only are all the primaries white, but also the secondaries forming the speculum, the alula and a few greater wing-coverts. In this stage of the variant there is a striking similarity to the neck pattern of the adult drake Shoveler, *Anas clypeata* Linnaeus, which incidentally shows a white neck ring in some drakes in transition plumage from juvenile to first winter plumage, thus resembling the Mallard (1). Both these characters therefore demonstrate the close affinity existing between the Mallard and the Shoveler and fully support the suppression of the genus *Spatula* for the latter species.

The fully developed pattern of this Mallard variant is shown in Fig. 1.5. with virtually complete fusion of chin-spot and white at the root of the neck, with fully white primaries, alula and secondaries, though still with the majority of the wing-coverts normally coloured, as are the upperparts. The underparts as can be seen are somewhat leucistic over the belly. It is to be noted that specimens No. 2–5 have all arisen from normally coloured birds, which were placed on Bradbourne Lakes, Sevenoaks, approximately twenty years ago. No white "call-duck" have ever been put on to this water and the albinistic pattern has developed spontaneously, particularly during the past six years and presumably as the result of in-breeding, as the stock is very sedentary. We have other examples in both sexes and new ones occur annually. The first bird in the photograph was wild-shot by Dr. David Harrison at Otford, Kent.

As is well known in-breeding, without any special effort, and selective in-breeding in this species are both responsible for the production of variants of various kinds, including the so-called "Cayuja" Mallard and such types as the "pepper and salt" variety, isabelline and other leucistic varieties and a melanistic type. It is equally well known that many such varieties are of peculiarly local distribution owing to the fact that the Mallard in domestication is of singularly sedentary habit.

These conditions and results are readily understandable and in themselves might appear sufficient. However, when one realises that a precisely similar combination of homologous characters can occur in other species, then it is evident that this circumstance alone takes the phenomenon outside the category of accidental variation and stresses the desirability of further consideration.

The other species in which one or more of this set of homologous characters occur are the Mandarin Duck, *Aix galericulata* (Linnaeus), Salvadori's Duck, *Anas waigiuensis* Rothschild and Hartert, the domestic Muscovy Duck, *Cairina moschata* Linnaeus and the White-winged Wood Duck, *Cairina scutulata*, S. Müller, the European Green-winged Teal, *Anas c. crecca* Linnaeus, the Chilean Teal, *Anas f. flavirostris* Vieilliot[2] and various diving duck, *Netta* and *Aythya* species, while one of us (J.G.H.[3]) recorded an instance of symmetrical white wings in a wild adult drake Goosander, *Mergus merganser merganser* (Linnaeus) which is the only instance of this particular variant known to us in the diving duck species.

The condition in the Mandarin is shown in the accompanying photograph. Both were bred in captivity by Dr. Edmund Gleadow and the drake shows a very distinctive white chin and neck spot corresponding to Stage 2 of the Mallard, while the duck corresponds to Stage 5 of the Mallard. Both of these Mandarins had white primaries on the unpinioned wing and would presumably have been symmetrical. We have a third example in an intersex, also from Dr. Gleadow.

The Muscovy Duck has become heavy and coarse under domestication and various colour changes have occurred. We have one example in which the head and neck corresponds closely to our Stage 5 of the Mallard and this bird also has several white primaries. Many Muscovy Ducks at the present time have totally white heads and necks and symmetrical white primaries.

The closely-related White-winged Wood Duck shows a vairable degree of whiteness on the head and neck, but in the majority there is a marked tendency for the white to concentrate into a neck ring and the chin in all fourteen wild-killed examples in the British Museum and in the two we have from the Wildfowl Trust is white. We have seen none with any trace of white primaries.

We have also examined ten examples of Salvadori's Duck, six were wild taken in New Guinea, now in the British Museum, three were from the Wildfowl Trust collection and the tenth was presented to us by the Wildfowl Trust. These last four birds were from the collection of Sir Edward Hallstrom at Nondugl and were presented by him to the Trust, with eleven others, some of which survive.

Two of the wild-taken females show traces of a white chin spot as does an adult drake in the Wildfowl Trust collection, but the adult drake presented to us shows both a white chin spot and a white neck spot, corresponding to the Mandarin drake illustrated.

As in the case of the Mallard, both Muscovy and Mandarin Ducks have come under domestication and all three are under the same artificial stresses. This may well apply to the rare Salvadori's Duck and we believe that it is under these circumstances that the remarkable and constant albinistic patterning becomes revealed, as the result of inbreeding.

At this point it is useful to enumerate the species in which the characters under discussion occur, either as part of a species' normal morphology or as a recurring homologous expression, examples of variants occurring in the wild state being marked with an asterisk.

(1) *Symmetrical white primaries.* These are found normally only in the swans* including the Black Swan, *Cygnus atratus* (Latham).

As a variant, this character is found in the Mallard*, Muscovy, Mandarin and Goosander*.

(2) *White chin spot.* This character is more widely distributed and is found as a constant character in the Ferruginous Duck*, *Aythya nyroca* (Güldenstädt). It is also present in a number of Tufted Duck*, *A. fuligula* (Linnaeus), Pochard*, *A. ferina* (Linnaeus), Scaup*, *A. marila* (Linnaeus) New Zealand Scaup, *A. novae-zeelandiae* (Gmelin) and the Red-crested Pochard*, *Netta rufina* (Pallas).

It is found as a variant character in the Mallard*, Salvadori's Duck*, Mandarin Duck and Muscovy Duck.

(3) *White neck spot.* In its strictest sense, this character is not found normally in any duck species, if one excludes the white semi-ring of the drake Mallard. It is our considered opinion that when seen in other species, the white neck spot is homologous to this character in the Mallard and this interpretation of it would infer that the Mallard is to be regarded as a species of considerable antiquity.

We have found white neck spots or semi-rings as variants in the following species:—

European Green-winged Teal*, Yellow-billed Teal*, Mandarin Duck, Gadwall*, *Anas strepera* Linnaeus[4], Salvadori's Duck, White-winged Wood Duck and Muscovy Duck. A white neck ring also occurs as a transient character in some eclipse drake Pintail*, *Anas acuta* Linnaeus and in immature to first winter drake Shoveler*, *Anas clypeata* Linnaeus.

(4) *The characters in combination.*

All three characters have only been found in combination in the Mallard, Muscovy Duck and Mandarin Duck. The white chin and neck spots are found in combination in these three and in Salvadori's Duck.

The development of the albinistic patterning is shown therefore to be a graduated phenomenon, associated with in-breeding in domestication, but also occurring to a lesser degree in the wild state.

Acknowledgements. We would like to thank Mr. J. D. Macdonald for facilities to study specimens in the British Museum (Natural History); also Mr. Peter Scott and the Wildfowl Trust for the presentation of a Salvadori's Duck and the loan of others. The following also provided us with valuable specimens:— Dr. E. Gleadow, Dr. David Harrison, Lt. Cdr. A. S. McLean, the late Mr. Foster Stubbs, Mr. John Wardell and Captain J. V. Wilkinson, R.N. Sevenoaks Urban District Council granted us

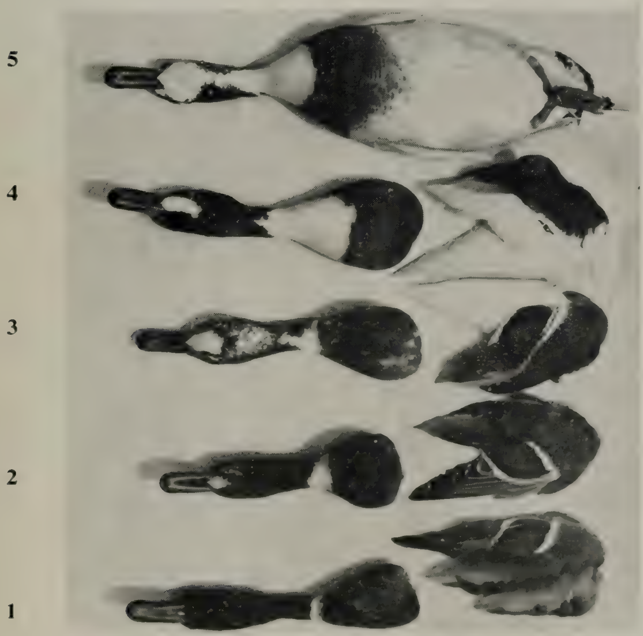

Fig. 1.—Albinistic Patterning in the Mallard
Lower bird:— 12th October, 1958; Otford, Kent.
All others:— 16th March, 1958; Sevenoaks, Kent.

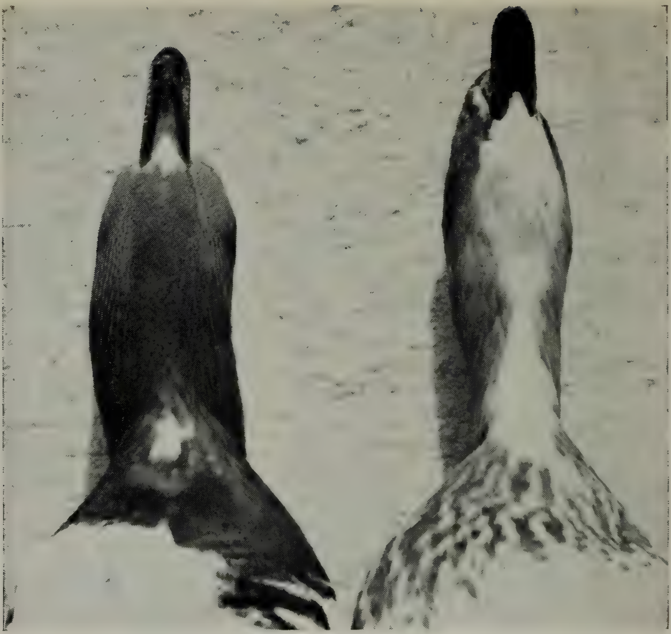

Fig. 2.—Albinistic Patterning in the Mandarin

Left:— 25th February, 1961. 2nd year drake.
Right:— 26th February, 1961. 1st year duck.

permission to collect and study the Mallard on Bradbourne Lakes and Mrs. Pamela Harrison took the photographs for us. We are most grateful to them all.

Postscript

Since going to press, we have received a further drake Mandarin with white primaries from Dr. E. Gleadow, bred this year it is an immature drake Mallard, shot by Mr. J. Wilde on the Isle of Sheppey, Kent on 30th September, 1961, which has a white breast shield, but is otherwise in normal juvenile plumage. We are very grateful to both these gentlemen for the specimens.

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[1] Harrison, J. M. and J. G. "Evolutionary Significance of certain Plumage Sequences in Northern Shoveler." *Bull. B.O.C.*, *Vol.* 79, pp. 135–42. 1959.

[2] Harrison, J. M. and J. G. "The White Neck Spot Variant in the European Green-winged Teal and the Yellow-billed Teal." *Bull. B.O.C.*, *Vol.* 78, *pp.* 104–5. 1958.

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[4] Harrison, J. M. and J. G. "Plumage Variants in drake Gadwall" *Bull. B.O.C.*, *Vol.* 79, *pp.* 78–9. 1959.

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Authors introducing a new name or describing a new species or race should indicate this in their title and display the name prominently in the text followed by *nom. nov.*, *sp. nov.*, *subsp. nov.* as appropriate. In these descriptions, the first introduction of the name should be followed by paragraphs for "Description", "Distribution", "Type", "Measurements of Type", "Material examined" and further sub-headings as required.

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DINNERS AND MEETINGS FOR 1961

19th December.

Published by the BRITISH ORNITHOLOGISTS' CLUB and printed by
The Caxton & Holmesdale Press, South Park, Sevenoaks, Kent.

BRITISH ORNITHOLOGISTS' CLUB

(Founded 5th October, 1892)

TITLE and OBJECTS

The objects of the Club, which shall be called the "British Ornithologists' Club", are the promotion of scientific discussion between Members of the British Ornithologists' Union and others interested in ornithology, and to facilitate the publication of scientific information connected with ornithology.

RULES

(As amended, 19th September, 1961)

MANAGEMENT

(1) The affairs of the Club shall be managed by a Committee, to consist of a Chairman to be elected for three years, and who shall at the end of that period not be eligible for re-election for the next term; one Vice-Chairman, who shall serve for three years and who shall at the end of that period not be eligible for re-election for the next term; an Editor of the Bulletin to be elected for five years, and who shall at the end of that period not be eligible for re-election for the next term; a Secretary and a Treasurer who shall be elected for a term of one year, but who shall be eligible for re-election at the next term. There shall be, in addition, four other Members, the senior of whom shall retire each year, the vacancy being filled by the election of another Member. Officers and Members of the Committee shall be elected by the Members of the Club at an Annual General Meeting and the names of such Officers and Members of the Committee nominated by the Committee for the ensuing year shall be circulated with the notice convening the Annual General Meeting at least two weeks before the Meeting. Should any Member wish to propose another candidate, the nomination of such, signed by at least two Members, must reach the Secretary at least one clear week before the Annual General Meeting.

(2) Any Member desiring to make a complaint of the manner in which the affairs of the Club are conducted must communicate in writing with the Chairman, who will, it if is considered necessary, call a Committee Meeting to deal with the matter.

(3) If the conduct of any Member or Associate-Member, hereinafter together described as Members, shall be deeemed by the Committee to be prejudicial to the interests of the Club, that Member may be requested by the Committee to withdraw from the Club. In the case of a refusal, the Member's name may be removed from the list of Members at an Annual General Meeting, provided that, in the notice calling the meeting, intimation of the proposed resolution to remove the Member's name shall have been given to that Member, and a majority of the Members present shall record their votes for such removal.

SUBSCRIPTIONS

(4) Any member of the British Ornithologists' Union may become a member of the Club on payment to the Treasurer of a subscription of £1 10*s*. 0*d*. per annum. A member who ceases to be a member of the British Ornithologists' Union shall also cease to be a member of the Club.

Associate Members enrolled under the Rule 4 hereby revoked shall retain all privileges as therein defined but no further Associate Members shall be admitted.

A member who has had an unbroken membership of the Club for fifty years shall become a Life Member, and shall not be required to pay any further Annual Subscriptions.

(5) Members of the British Ornithologists' Union who are ordinarily resident outside the British Isles, and ornithologists from the British Commonwealth, or from foreign countries, may be admitted at the discretion of any member of the committee as Temporary Associates (Overseas) of the Club for the duration of any visit to the British Isles not exceeding one year. Privileges of Temporary Associates (Overseas) shall be limited to attendance at the ordinary meetings of the Club and the introduction of guests.

Members of the British Ornithologists' Union ordinarily resident in the British Isles, may be admitted at the discretion of the Honorary Secretary as Temporary Associates (Home) to any one meeting during the Winter Session of the Club.

MEETINGS

(6) The Club will meet, as a rule, on the third Tuesday in the months of January to May inclusive and September to December inclusive, at such hour and place as may be arranged by the Committee. At these Meetings papers upon ornithological subjects will be read, specimens exhibited and described, and discussion invited.

(7) The Annual General Meeting of the Club shall be held on the day of the April Meeting of each year, and the Treasurer shall present thereat the Balance Sheet and Report; and the election of Officers and Committee, in so far as their election is required, shall be held at such Meeting.

(8) A Special General Meeting may be called at the instance of the Committee for any purpose which they deem to be of sufficient importance, or at the instance of not fewer than fifteen Members. Notice of not less than two weeks shall be given of every Annual General Meeting and Special General Meeting.

INTRODUCTION OF VISITORS

(9) Members and Temporary Associates (Overseas) may introduce visitors at any ordinary Meeting of the Club, but the same guest, except for husbands and wives of members, shall not be eligible to attend on more than three occasions during the year. No former Member who has been removed for any cause, and who has not been reinstated, shall be allowed to attend as a guest.

'BULLETIN' OF THE CLUB

(10) An Abstract of the proceedings of the Club shall be printed as soon as possible after each Meeting under the title of the *Bulletin of the British Ornithologists' Club*, and one copy shall be distributed gratis to every Member who has paid the current annual subscription.

Contributors are entitled to a maximum of thirty free copies of the *Bulletin* and if they desire to exercise this privilege they should give notice to the Editor when their manuscript is handed in. Copies in excess of the thirty free copies can be ordered at the same time. These will be supplied by the publishers to whom payment at current rates shall be made on demand.

Descriptions of new birds may be published in the *Bulletin* when such cannot be communicated at the Meeting of the Club. This shall be done at the discretion of the Editor.

Communications are not restricted to members and contributions, particularly on systematics and related subjects, will be considered for publication.

(11) No communication, the whole or any important part of which has already been published eleswhere, shall be eligible for publication in the *Bulletin*, except at the discretion of the Editor; and no communication made to the Club may be subsequently published elsewhere without the written sanction of the Editor.

TRUST FUND

(12) (a) Any stocks shares or other securities or money from time to time bequeathed or given to the Club shall be vested in trustees for the Club unless in any particular case the Club shall by a special resolution otherwise decide, and any other securities, money or other property (whether real or personal) from time to time belonging to the Club may be vested by or with the consent of the Committee in trustees for the Club.

(b) Any property to be vested pursuant to this Rule in trustees for the Club shall be paid or transferred to or vested in, deposited with or otherwise placed under the control of trustees or a bank or other trust corporation to be held upon such trusts for the benefit of the Club and with or subject to such powers and other provisions as may be approved by a special resolution of the Club and declared by or contained in a formal deed, including provision for the purchase out of the trust funds of a house or other building, land or other property for the use for all or any of the purposes of the Club.

(c) The Committee may pay to any bank or other trust corporation so appointed such remuneraton for acting as trustee for the Club as may from time to time be agreed between the Committee and the trustees.

AMENDMENT OF RULES

(13) These Rules or any of them may be revoked or amended and any new rule or provision may be substituted or added by a special resolution.

(14) In these Rules ''a special resolution'' means a resolution passed by a majority of not less than three fourths of the members voting thereon at a General Meeting of the Club of which not less than two weeks' notice specifying the intention to propose the resolution as a special resolution has been given.

The Caxton & Holmesdale Press, 104 London Road, Sevenoaks

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